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THESIS

PEACE THROUGH TRADE: AN ANALYSIS OF THE EFFECT OF DOMESTIC TRADE ON INTERNATIONAL CONFLICT AND CIVIL WAR

by

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This thesis examines how different levels of domestic trade affect the intensity of conflict within and between states. Specifically, the thesis utilizes a cross-sectional analysis of pooled time-series data, both previously collected conflict data sets and published economic data, to test the hypothesis. The data is analyzed by conducting a correlation analysis followed by linear regression of the independent and dependent variables, controlling for certain variances between the cases by utilizing control variables. The findings reveal that high levels of domestic trade decrease a state's propensity to initiate an inter-state dispute or to fall into civil war. The policy implications of the findings are that advancing domestic trade will have the greatest statistical effect on decreasing a state's propensity to initiate an inter-state dispute or fall into civil war.

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ABSTRACT

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I.   INTRODUCTION

A.   PURPOSE

This thesis will examine how different levels of domestic trade affect the intensity of conflict within and between states. Specifically, the thesis will try to answer the question of whether domestic trade is correlated to conflict, both international and domestic. Democratic peace and the international trade theory is accepted by many scholars, and much has been written examining the relationship between the levels of international trade and in particular, bilateral trade, and militarized inter-state conflict. This thesis will expand our knowledge of inter- and intra-state conflict by focusing on domestic trade, a factor that has heretofore not been thoroughly examined. Lastly, the analysis of the data in this thesis will be used to develop a general domestic trade theory that will form the basis for a series of policy recommendations.

B.   IMPORTANCE

Much of foreign policy of the United State is based on the theory that the integration of economies into the global community will increase the level of interdependence that will, in turn, lower the level of global militarized intra-state disputes and inter-state war, and that this will create a secure global environment for the United States and its allies.[1] Much literature has been written on the effects of trade on conflict, and even the

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[1] Office of the President of the United States, *The National Security Strategy of the United States of America* (Washington, D.C.: Government Printing Office, 2006), 25-30 and 47-9.

democratizing effects of trade,[2] but in the case of states where democracy is expected to grow or at least where they are expected to become open economies that participate in free and fair trade, it is important to examine the role of domestic trade.[3]   Since the majority of the literature addresses either the trade-conflict debate or the relationship between civil war and international trade, this thesis will broaden our inquiry by examining the relationship between domestic trade and conflict, both international and internal.   The point of departure for this analysis is the theory that domestic trade causes economic development within a state, which helps to increase political stability.[4]   Building on these theories, we will assume that the pacifying benefits of economic development are not limited to internal disputes and that improved domestic trade can reduce the number and intensity of militarized conflicts within and between states.

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[2] See: John R. Oneal, Frances H. Oneal, Zeev Moaz and Bruce Russett, "The Liberal Peace: Interdependence, Democracy, and International Conflict," *Journal of Peace Research* 33, no. 1 (February 1996), John R. Oneal and James Lee Ray, "New Test of the Democratic Peace: Controlling for Economic Interdependence, 1950-85," *Political Research Quarterly* 50, no. 4 (December 1997), John R. Oneal and Bruce M. Russett, "The Classical Liberals Were Right: Democracy, Interdependence, and Conflict, 1950-1985," *International Studies Quarterly* 41, no. 2 (June 1997), John R. Oneal and Bruce Russett, "Assessing the Liberal Peace with Alternative Specifications: Trade Still Reduces Conflict," *Journal of Peace Research* 36, no. 4 (July 1999), and Bruce Russett, John R. Oneal and David R. Davis, "The Third Leg of the Kantian Tripod for Peace: International Organizations and Militarized Disputes, 1950-85," *International Organization* 52, no. 3 (Summer 1998).

[3] Office of the President of the United States, *The National Security Strategy of the United States of America* (Washington, D.C.: Government Printing Office, 2006), 25-6.

[4] Adam Przeworski et al., *Democracy and Development: Political Institutions and Well-Being in the World, 1950-1990* (Cambridge: Cambridge University Press, 2000).

The policy implications of this research are obvious. If the hypothesis of this thesis is validated and it is found that there is indeed a negative correlation between domestic trade and conflict, it will show that improving domestic trade within a target state increases the probability of strengthening international and domestic peace.

C. PROBLEM AND HYPOTHESIS

This thesis will attempt to advance our knowledge of the relationship between trade and conflict. A considerable portion of the research concerning the trade-conflict debate addresses trade or economic interdependence at the international level, principally examining how levels of international trade or interdependence correlate with conflict. The previous research has produced a diversity of definitions on conflict that include war, conflict intensity levels, democratic peace, and Militarized Inter-State Disputes (MIDs). This thesis will continue this trend and utilize conflict intensity levels

in its analysis.[5]   There have also been an equal number of
inconclusive results or contradicting results between the
two prominent camps of the trade-conflict debate: the
realist camp,[6] which argues that trade increases conflict
and the liberal camp,[7] which points out that there is indeed
a negative correlation between the variables.[8]   This thesis
will continue the spirit of this research but will take a
new and different approach in its examination of the trade-

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[5] For more see Bruce Russett, *International Regions and the International System*. (Chicago: Rand McNally, 1967) and Peter Wallensteen, *Structure and War: On International Relations 1920-1968*. (Stockholm: Raben & Sjogren, 1973). On conflict intensity levels see: Solomon W. Polachek, "Conflict and Trade." *The Journal of Conflict Resolution* 24, no. 1 (March 1980), Solomon W. Polachek and Judith McDonald. "Strategic Trade and the Incentive for Cooperation." In *Disarmament, Economic Conversion, and Management of Peace*, ed. Manas Chatterji and Linda Rennie Forcey, 273-284. (New York: Praeger, 1992), Solomon W. Polachek, "Why Democracies Cooperate More and Fight Less: The Relationship Between International Trade and Cooperation." *Review of International Economics* 5, no. 3 (1997), Mark Gasiorowski and Solomon W. Polachek, "Conflict and Interdependence: East-West Trade and Linkages in the Era of Detente." *The Journal of Conflict Resolution* 26, no. 4 (December 1982), and Mark J. Gasiorowski, "Economic Interdependence and International Conflict: Some Cross-National Evidence." *International Studies Quarterly* 30, no. 1 (March 1986): 23-38. For MIDSs see: John R. Oneal and Bruce Russett. "Assessing the Liberal Peace with Alternative Specifications: Trade Still Reduces Conflict." *Journal of Peace Research* 36, no. 4 (July 1999), John R. Oneal and James Lee Ray, "New Test of the Democratic Peace: Controlling for Economic Interdependence, 1950-85." *Political Research Quarterly* 50, no. 4 (December 1997), John R. Oneal and Bruce M. Russett. "The Classical Liberals Were Right: Democracy, Interdependence, and Conflict, 1950-1985." *International Studies Quarterly* 41, no. 2 (June 1997), John R. Oneal, Frances H. Oneal, Zeev Moaz and Bruce Russett. "The Liberal Peace: Interdependence, Democracy, and International Conflict." *Journal of Peace Research* 33, no. 1 (February 1996), and Katherine Barbieri, "Sleeping with the Enemy: The Impact of War on Trade," *Journal of Political Research* 36, no. 4 (1999).

[6] See: Russett (1967), Wallensteen (1973), and Barbieri (1999).

[7] See: Polachek (1980, 1992, 1997) Gasiorowski and Polachek (1982), Gasiorowski (1986), Oneal et al. (1996), Oneal and Ray (1997), and Oneal and Russett (1997, 1999).

[8] Gasiorowski (1986) and Edward D. Mansfield, *Power, Trade, and War* (Princeton: Princeton University Press, 1996) achieved mixed results.

conflict correlation by selecting a completely different independent variable – domestic trade. For our analysis, the thesis hypothesis is that domestic trade and conflict is negatively correlated and leads to the following propositions that will be addressed in the research.

Propositions

(P.1) High levels of domestic trade will lower a state's propensity to initiate inter-state conflict.

(P.2) High levels of domestic trade will lower a state's propensity to fall into civil war.

D. CHAPTER SUMMARY

1. Chapter II (Literature Review)

Chapter II will evaluate the relevant literature on interdependence, international trade and conflict, and civil war. In addition, the literature review will introduce theories and research methodologies that were utilized in this thesis to construct the research design.

2. Chapter III (Research Design and Methodology)

This chapter will describe the research design and methodology that was used in testing the hypothesis and supporting propositions. Moreover, the model for measuring and testing the correlation between trade and conflict will be presented along with the methodology for the operalization of the variables.

3. Chapter IV (Testing and Analysis)

Chapter IV will introduce the testing, the results of testing, and the analysis of how these are related to the aforementioned propositions and research question.

4. Chapter V (Conclusion)

Chapter V will review and sum up the results of the testing for each of the propositions. Additionally, the chapter will address the policy implications of the study and areas for future research.

II. LITERATURE REVIEW

A.   INTRODUCTION

A large body of political science, international relations, economic, and anthropological literature is pertinent to the study of domestic trade and its correlation to militarized inter-state disputes and civil war — the focal point of this thesis. The objective of the literature review presented in this chapter is to synthesize and summarize the pertinent and relevant literature pertaining to two critical research areas: the impact of trade on international conflict and the impact of domestic trade on civil war. This literature review will serve as an effective point of departure, which will address past theoretical and empirical works and provide an intellectual foundation for the rest of the thesis.

B.   TRADE INCREASES CONFLICT (REALIST VIEW)

One of the earliest empirical works on the trade-conflict debate is by Russett[9] who conducted factor analysis from 1945-67, and concluded that nations that were linked by trade were more likely to engage in war than dyads who did not share such a connection. Interestingly, Russett noted that trade is negatively correlated with the geographical proximity of states, which is also a contributing variable that impacts the frequency of wars. Russett's work is important to our study, not only because it is considered seminal and

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[9] Bruce Russett et al., *International Regions and the International System* (Chicago: Rand McNally, 1967).

represents one of the earliest empirical studies of the trade-conflict debate, but because his findings relate more to the positional closeness of these states when considering the correlation between proximity and war.[10] Moreover, some of the states that were used in the data set included several colonial powers that had, what could be characterized as, artificial levels of trade and conflict.

Wallensteen[11] took a different approach and used contingency tables for his analysis, which spanned the years 1920-68.[12] He concluded that not all trade between states promotes peace, and argued that asymmetric trading relationships can lead to conflict between states.[13] The main point is that when states are in an asymmetric trading relationship, the independent states (the "top dogs" in the trading relationship) might threaten or actually make

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[10] For more on the debate about the correlation between geographical closeness and war, see: James P. Weslay, "Frequency of Wars and Geographical Opportunity." *Journal of Conflict Resolution* 6, no. 4 (December 1962), David Garnham, "Dyadic International War 1816-1965: The Role of Power Parity and Geographical Proximity." *The Western Political Quarterly* 29, no. 2 (June 1976), and John A. Vasquez, "Why Do Neighbors Fight?: Proximity, Interaction, or Territoriality." *Journal of Peace Research* 32, no. 3 (August 1995).

[11] Peter Wallensteen, *Structure and War: On International Relations 1920-1968* (Stockholm: Raben & Sjogren, 1973).

[12] In conducting his study, Wallensteen used three variables: center-periphery dichotomy, impact of interaction on the interacting countries, and types of social orders these countries represent.

[13] For more on symmetric and asymmetric trading relationships, see: David A. Baldwin, *Economic Statecraft*. (Princeton: Princeton University Press, 1985), and Jack S. Levy and Salvatore Ali. "From Commercial Competition to Strategic Rivalry to War: The Evolution of the Anglo-Dutch Rivalry, 1609-1652." In *The Dynamics of Enduring Rivalries*, ed. Paul F. Diehl. (Urbana: University of Illinois Press, 1998), and Nazli Choucri and Robert North. *Nations in Conflict: National Growth and International Violence*. (San Francisco: Freeman, 1975).

demands of dependent ("under dog") trading states whereby the situation can escalate to the point of an MID or even war. Conversely, the data also showed that conflict between "top dog" states decreased as their interdependence increased. Wallensteen's approach is particularly useful in that he not only discussed trade and conflict, but also the quality of the trade. This is important as it suggests that only mutually beneficial trade fosters interdependence and thus promotes peace.

C.   TRADE DECREASES CONFLICT (LIBERAL VIEW)

Many of the recent empirical studies provide stronger support for the liberal argument – trade decreases conflict. Polachek[14] departed from the previously mentioned studies and adopted a dyadic level of analysis, influencing the majority of all future trade-conflict research. For the first time in the trade-conflict debate, data was used from the Conflict and Peace Data Bank (COPDAB)[15] that contained data from the analysis of thirty states from 1958-67. From this data, Polachek developed an index based on the net frequency of conflict (NETF) as a means to compress the vast amount of information contained in the COPDAB and to define his dependent variable. This NETF index is important to the trade-conflict debate as it presented future scholars with a means to effectively organize the COPDAB data into

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[14] Solomon W. Polachek, "Conflict and Trade," *The Journal of Conflict Resolution* 24, no. 1 (March 1980).

[15] For more on COPDAB, see: E. E. Azar, *The Codebook of the Conflict and Peace Databank* (Chapel Hill: University of North Carolina, 1980) and E. E. Azar, "The Conflict and Peace Databank (COPDAB) Project," *Journal of Conflict Resolution* 24 (March 1980).

a useable form.[16]   Polachek defined the independent variable as the level of the material well-being of a state.[17]   The study showed a clear negative correlation between trade and conflict. It found that the higher the level of trade that exists between two states, the more costly the conflict. Surprisingly though, when the NETF is disaggregated by type of interaction, elasticity shows a negative to mildly positive correlation between trade and some conflict actions. This is problematic, as trade might not have a significant impact on severe forms of conflict.

Polachek continued to work on his model and later teamed up with Gasiorowski to examine trade linkages between the United States and Warsaw Pact states.[18]   The authors concluded that there is a negative hyperbolic relationship between trade and conflict from 1971-75, but

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[16] NETF is calculated by subtracting cooperative from conflict events. A score < 0 means a cooperative environment exists while a score > 0 means a conflict environment exists. Conflict events are those categorized by scores of 9-15 and cooperative events as those between 1 and 7.

[17] A country's welfare function is defined as: $w = w(c, z)$ where c and z are desired consumption and existing hostility respectively. Furthermore, the equation $c = q + m - x$ states that desired consumption equals (q) total production plus imports (m) minus exports (x). These formulas show that countries with high levels of imports and exports will experience high costs as (c) decreases.

[18] The authors chose the Warsaw Pact countries instead of the USSR due to the political and economic integration that tended to create one trading block instead of individual trading nations. Mark Gasiorowski and Solomon W. Polachek, "Conflict and Interdependence: East-West Trade and Linkages in the Era of Detente," *The Journal of Conflict Resolution* 26, no. 4 (December 1982).

there is less causality from 1976-78.[19]   While the analysis used COPDAB as the dependent variable, as was the case in Polachek's previous study, this analysis drew on real quarterly U.S. dollar figures of trade from 1967-78 as the dependent variable.[20]   Once a correlation between trade and conflict had been determined, the causality was assessed and found to flow from trade to conflict.[21]

Gasiorowski[22] later conducted his own analysis where he disagreed with both Polachek's original work and surprisingly, a work he co-authored with Polachek.[23]   His

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[19] The authors attribute this deviance to the Jackson-Vanik and Stevenson amendments (which addressed allowing a larger number of Russian Jews to immigrate to Israel) and the subsequent rescinding of the Moscow accord as contributing factors that overwhelmed the benefits of trade.

[20] In using the COPDAB data, the authors defined conflict as either directed by the United States toward the Warsaw Pact or conflict directed by the Warsaw Pact to the United States.   In addition, the authors noted that using the U.S. dollar to measure United States - Warsaw Pact trade is not ideal, but commented that it was the best data available that was compiled on a quarterly basis.

[21] For more on the analysis method developed by Granger, see: C.W.J Granger, "Investigating Causal Relations by Economic Models and Cross-Spectral Methods," *Econometrica* 37 (August 1969).   For more on Polachek's claims, see: Solomon W. Polachek and Judith McDonald, "Strategic Trade and the Incentive for Cooperation," in *Disarmament, Economic Conversion, and Management of Peace*, ed. Manas Chatterji and Linda Rennie Forcey (New York: Praeger, 1992), and Solomon W. Polachek, "Why Democracies Cooperate More and Fight Less: The Relationship Between International Trade and Cooperation," *Review of International Economics* 5, no. 3 (1997).

[22] Mark J. Gasiorowski, "Economic Interdependence and International Conflict: Some Cross-National Evidence," *International Studies Quarterly* 30, no. 1 (March 1986).

[23] Solomon W. Polachek, "Conflict and Trade," *The Journal of Conflict Resolution* 24, no. 1 (March 1980) and Mark Gasiorowski and Solomon W. Polachek, "Conflict and Interdependence: East-West Trade and Linkages in the Era of Detente," *The Journal of Conflict Resolution* 26, no. 4 (December 1982).

argument was that Polachek did not use the intensity weights of the COPDAB data and instead opted for a +1 or -1 rating approach to measure the level of conflict.[24] Moreover, Gasiorowski argued that the dollar value of trade used to measure the "gains from trade" were misleading because it was not considered as a measure of GNP.[25] In the later co-authored work, Gasiorowski asserted that while trade did help both the United States and the Warsaw Pact states, the level of trade never increased appreciably or reached a level high enough to cause true interdependence, thus characterizing the results as based on interconnectedness. In his own work, Gasiorowski used the same COPDAB data set for his dependent variable, but developed a new three-step method to measure conflict (CONF).[26] In this case, interdependence was viewed as a set of relationships that can be either costly or beneficial to a state. To measure the costs or benefits, a new set of independent variables were identified which focused on gross domestic product

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[24] Gasiorowski's point was that since the intensity weights were not used, then a friendly diplomatic gesture would have the same, but numerically opposite, effect as all-out war.

[25] Gasiorowski described the following example using Polochek's calculation: Norway had $408 million in trade with the United States, which represented about 7% of its total trade in 1970. Norway would have a greater incentive to reduce conflict with the United States than the Dominican Republic who had 311$ million in trade with the United States, representing 63% of its total trade, because Norway had a larger total dollar value.

[26] Gasiorowski described his three-step method as first including all events by country (A) from 1960-77. Second, the conflict or cooperation intensity rating for each event was multiplied by the percentage of trade from country (A's) total trade. Third, the trade weighted intensities were totaled and divided by the total number of events in the testing period.

per capita and import price elasticity.[27]   It is
interesting that the results were mixed and supported
both schools of thought on the trade-conflict debate.
The principle conclusion was that interdependence does
produce increased international conflict. It should be
noted though, that conflict does not necessarily equate
to MIDs or even war because the COPDAB data included many
intensity-increasing events that fall short of this
extreme.   As such,   the data only shows that
interdependence increases tension, not necessarily
conflict. Alternately, the data also shows that trade
volume is negatively correlated to conflict, which
appears to support Wallensteen's argument that mutually
beneficial trade lowers conflict.[28] Gasiorowski advanced
the trade-conflict debate by redefining the definitions
of interdependence as well as identifying new independent
variables to measure the effects of trade
interdependence.

Oneal and his group of colleagues have added a
significant body of research to the trade-conflict

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[27] For the specific variables, see: Mark J. Gasiorowski, "Economic
Interdependence and International Conflict: Some Cross-National
Evidence," *International Studies Quarterly* 30, no. 1 (March 1986): 34.

[28] Peter Wallensteen, *Structure and War: On International Relations
1920-1968* (Stockholm: Raben & Sjogren, 1973).

debate.[29]   While their research focused more on the democratic peace theory debate, they did include variables into their studies that account for the interdependency between states, mainly trade.   They further expanded the study by including non-governmental organizations (NGO) into their analysis.[30]   Though the methodology for these studies differed from previous studies, the independent variable was MIDs, not just conflict, and the authors were the first to use logit analysis.[31]   Through their repeated analyses, which often included differing independent variables with each study, they always came to the conclusion that trade is negatively correlated to MIDs.   While the studies clearly support the argument that trade interdependence does prevent MIDs, assessing the findings by comparing them is made difficult by the variety of variables used across

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[29] See: John R. Oneal, Frances H. Oneal, Zeev Moaz and Bruce Russett, "The Liberal Peace: Interdependence, Democracy, and International Conflict," *Journal of Peace Research* 33, no. 1 (February 1996), John R. Oneal and James Lee Ray, "New Test of the Democratic Peace: Controlling for Economic Interdependence, 1950-85," *Political Research Quarterly* 50, no. 4 (December 1997), John R. Oneal and Bruce M. Russett, "The Classical Liberals Were Right: Democracy, Interdependence, and Conflict, 1950-1985," *International Studies Quarterly* 41, no. 2 (June 1997), John R. Oneal and Bruce Russett, "Assessing the Liberal Peace with Alternative Specifications: Trade Still Reduces Conflict," *Journal of Peace Research* 36, no. 4 (July 1999), and Bruce Russett, John R. Oneal and David R. Davis, "The Third Leg of the Kantian Tripod for Peace: International Organizations and Militarized Disputes, 1950-85," *International Organization* 52, no. 3 (Summer 1998).

[30] See: Bruce Russett, John R. Oneal and David R. Davis, "The Third Leg of the Kantian Tripod for Peace: International Organizations and Militarized Disputes, 1950-85," *International Organization* 52, no. 3 (Summer 1998).

[31] For more on their dependent variable, see: John A. Vasquez, "The Steps to War: Toward a Scientific Explanation of Correlates of War Findings," *World Politics* 40, no. 1 (October 1987).

the studies. Many of the works have been written by a small number of scholars who have tested theories using differing methodologies and have sometimes even ended up countering their previous work.

Barbieri and Levy took a different approach to their research, and unlike previous attempts to find a correlation between trade and conflict, the authors examined how war affects trade by conducting an interrupted time series study.[32] This methodology enabled the authors to examine the issue over a large period of time, from 1870 to 1992, and detect trends of decreasing trade before and during wars. Their analysis, based on war level data from the COW data set and trade data from a previous work,[33] was applied to Lewis-Beck's formula.[34] Barbieri and Levy concluded that war would lower the level of trade between dyads, but that the lower level of trade is not statistically significant. Thus, their findings did not support the liberal argument. Later, Anderson and Carter[35] responded to Barbieri and Levy with their own study, and examined the impact of war on trade at the dyadic level. Similarly, Anderson and Carter

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[32] See: Katherine Barbieri, "Sleeping with the Enemy: The Impact of War on Trade." *Journal of Political Research* 36, no. 4 (1999).

[33] Katherine Barbieri, "Economic Interdependence and Militarized Interstate Conflict, 1870-1985" (PhD diss., Binghamton University, 1995).

[34] See: Michael S. Lewis-Beck, "Some Economic Effects of Revolution: Models, Measurements, and the Cuban Evidence," *American Journal of Sociology* 84, no. 5 (1979).

[35] Charles H. Anderson and John R. Carter, "The Impact of War on Trade: An Interrupted Time-Series Study," *Journal of Peace Research* 38, no. 4 (July 2001).

utilized the COW data set, but identified different dyads, and decided to measure trade differently than Barbieri and Levy by utilizing a supply and demand model. Anderson and Carter found a strong negative correlation, and concluded that war and the lead-up to war lower the amount of trade between dyads. While their conclusion countered the findings of Barbieri and Levy, their findings were much stronger with an average R-squared of 0.85 among all dyads tested.

D.   CIVIL WAR AND TRADE

In addition to the above literature that has examined the trade-conflict debate from a more international perspective by principally addressing the issue of international trade, the following literature focuses on the economic effects of civil war, both internal and spillover effects.[36] Of primary importance to this thesis are the works by Bayer and Rupert and Murdoch and Sandler, as these works, more than the others, address the issues of trade and economic growth and how they are correlated to civil war.

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[36] The principal works in this study are: James C. Murdoch and Todd Sandler. "Economic Growth, Civil Wars, and Spatial Spillovers." *Journal of Conflict Resolution* 46, no. 1 (February 2002), James C. Murdoch and Todd Sandler. "Civil Wars and Economic Growth: Spatial Dispersion." *American Journal of Political Science* 48, no. 1 (January 2004), Paul Collier and Nicholas Sambanis. "Understanding Civil War: A New Agenda." *Journal of Conflict Resolution* 46, no. 1 (2002), Paul Collier, V.L. Elliot, Havard Hegre, Anke Hoeffler, Marta Reynal-Querol and Nicholas Sambanis. *Breaking the Conflict Trap: Civil War and Development Policy.* (New York: Oxford University Press & World Bank, 2003), Paul Collier, "On the Economic Consequences of Civil War." *Oxford Economic Papers* 51, no. 1 (1999), Mats Berdal and David M. Malone, comp. *Greed and Grievance: Economic Agendas in Civil Wars.* (Boulder: Lynne Rienner, 2000), and Resat Bayer, and Matthew C. Rupert. "Effects of Civil Wars on International Trade, 1950-92." *Journal of Peace Research* 41, no. 6 (2004).

Murdoch and Sandler addressed the issue by examining the influences of civil war on the per capita income level for both the state that is experiencing civil war and its neighbors, with the goal to measure the long- and short-term effects of civil war on per capita income.[37] The dependent variable was defined by a neoclassical growth model that took into account human capital, while the independent variable was compiled from multiple sources.[38] Murdoch and Sandler concluded that civil war significantly decreases per capita income in the short-term, and that the data is less clear on the long-term effects.[39] Later, Murdoch and Sandler expanded their study by extending the analysis beyond states that share a border with a country that is experiencing civil war. They concluded that the damaging economic effects of civil war would extend beyond those states that share a border with a country experiencing civil war.[40] More importantly though, they found that a state experiencing civil war would have a significant reduction in the rate of economic growth: 85 percent on the short-term growth and 31 percent on the long-term growth. Bayer and Rupert chose a different route and examined the effect of civil

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[37] James C. Murdoch and Todd Sandler, "Economic Growth, Civil Wars, and Spatial Spillovers." *Journal of Conflict Resolution* 46, no. 1 (February 2002).

[38] Penn World Tables, Correlates of War, and Civil Wars data sets.

[39] The short-term periods cover 4 to 5 years while long-term is defined as 20 to 25.

[40] James C. Murdoch and Todd Sandler. "Civil Wars and Economic Growth: Spatial Dispersion." *American Journal of Political Science* 48, no. 1 (January 2004).

war on bilateral trade.[41]   Similar to the Murdoch and
Sandler studies, Bayer and Rupert relied on known data
sets such as COW and the Penn World Table to pool time
series cross section data from 1949 to 1992.   The
dependent variable for their study was nominal logged
total dyadic trade and was measured by t + 1.[42]   The
research examined five hypotheses and used an equal
number of unique variables.   Their analysis found that
civil wars do have a negative impact on dyadic trade. The
finding is similar to many of the liberal trade-conflict
arguments.

E.   CONCLUSION

The above literature review addresses the large body
of political science, international relations, and economic
literature that is pertinent to the study of domestic trade
and its correlation to militarized inter-state disputes and
civil war – the focal point of this thesis.   Russett and
Wallensteen, the major proponents of the realist view,
argue that trade can increase the number of incidents of
inter-state disputes, especially when considering the
geographical proximity of states and the quality of the
trade between them.   Russett's notion, that geographical
proximity between states influences inter-state conflict,
is important and will need to be controlled during testing.
The opposing group of liberal scholars who advocate that

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[41] Resat Bayer and Matthew C. Rupert, "Effects of Civil Wars on
International Trade, 1950-92." *Journal of Peace Research* 41, no. 6
(2004).

[42] For specifics on this variable, see: Katherine Barbieri,
"Economic Interdependence and Militarized Interstate Conflict, 1870-
1985" (PhD diss., Binghamton University, 1995).

trade decreases the propensity of inter-state conflict uses differing methodologies, timeframes, and data sets. Yet, these scholars generally arrive at the same conclusion. Our study uses regression methodology, which is similar to the research of Polachek and Gasiorowski. However, unlike the scholars who utilized the dyad as the unit of analysis, we used a cross-sectional analysis of pooled time-series data. This thesis diverges from Polachek and Gasiorowski in the unit of analysis primarily due to differences in data sets because our time-series data does not support dyadic analysis. Additionally, our study departs from previous research, which focuses on international trade as the independent variable. We utilized domestic trade,[43] which is used in the research of Murdoch and Sandler, as our independent variable.

The following chapter outlines in greater detail the specifics about how we built upon the relevant literature and drew together elements of Russett, Polachek, Gasiorowski, Murdoch, and Sandler, along with new elements, to construct a methodology to test the study's overarching thesis and supporting propositions.

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[43] Murdoch and Sandler examined the relationship of civil war with per capita income. For our study, we will use the real per capital income as a measure of domestic trade as our independent variable.

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III. RESEARCH DESIGN AND METHODOLOGY

A. INTRODUCTION

In this chapter, we will examine the peace through trade theory by testing the propositions mentioned in Chapter I. The field of international trade and its correlation to inter-state violence benefits from extensive academic research. However, the approach adopted by this thesis is different from previous research in that the center of examination is not international trade, but domestic trade. Since this field – examining the correlation between domestic trade and conflict – remains largely uncharted, this thesis will rely heavily on the research and methodologies advanced by those discussing the correlation between international trade and inter-state conflict that were highlighted in Chapter II.

In testing the correlation between domestic trade and inter- and intra-state violence, the research methodology for this thesis took the form of a time-series cross-sectional analysis of pooled data, both previously collected conflict data sets and published economic data. This statistical approach enabled us to consider and include in the testing as many cases as possible since the testing was only limited by the scope and quality of the data. One such limitation is the lack of quality economic data prior to 1950.[44] The thesis tested the effects of domestic trade on violence, in general, and the previously mentioned four propositions specifically, using a

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[44] The analysis will stop at 1997 to match the Causality of War datasets.

regression analysis of the pooled data. The unit of
analysis for examining the correlation between domestic
trade and inter-state conflict and civil war was time-
series data that came from annual observations of collected
data.[45] Some studies further refine the dyads and limit
those included in the analysis by adding a filter that
removes dyads that do not have two politically relevant
states.[46] This approach tries to limit dyads to those that
are considered "politically relevant" by seeking to remove
from the analysis those dyads that contain states which are
not contiguous and where at least one of the states that
comprise the dyad is not characterized as a major power by
the Correlates of War project.[47] Utilizing this type of
filter is understandable, especially when considering that
Oneal and company focused their research solely on
international conflict where the consideration of
contiguous or weak states might be irrelevant to their
analysis.

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[45] See John R. Oneal, Frances H. Oneal, Zeev Moaz and Bruce Russett,
"The Liberal Peace: Interdependence, Democracy, and International
Conflict," *Journal of Peace Research* 33, no. 1 (February 1996), John R.
Oneal and James Lee Ray, "New Test of the Democratic Peace: Controlling
for Economic Interdependence, 1950-85," *Political Research Quarterly*
50, no. 4 (December 1997), John R. Oneal and Bruce M. Russett, "The
Classical Liberals Were Right: Democracy, Interdependence, and
Conflict, 1950-1985," *International Studies Quarterly* 41, no. 2 (June
1997), John R. Oneal and Bruce Russett, "Assessing the Liberal Peace
with Alternative Specifications: Trade Still Reduces Conflict," *Journal
of Peace Research* 36, no. 4 (July 1999).

[46] For a further discussion on this and a discussion of how
contiguity affects dyads, see: Stuart Bremer, "Dangerous Dyads,"
Journal of Conflict Resolution 36, no. 2 (June 1992): 309-41.

[47] See: John R. Oneal, Frances H. Oneal, Zeev Moaz and Bruce Russett,
"The Liberal Peace: Interdependence, Democracy, and International
Conflict," *Journal of Peace Research* 33, no. 1 (February 1996).

Since the focus of this thesis is on the correlation between domestic trade and violence, utilizing such an approach for our analysis might not only unnecessarily remove dyads from consideration, but also significantly distort our findings especially when testing the correlation of domestic trade with intra-state violence (which makes dyadic analysis unnecessary). As such, this analysis did not utilize a dyadic level of analysis. Furthermore, in order to not ignore some of the variables that are meant to be controlled by using only politically relevant dyads, this thesis utilized several controls that sought to account for certain particular differences between the states used in our testing. These are discussed below.

B.   LIMITATIONS

The analysis for this thesis was constrained by two factors: the availability of usable data sets and the time frame or span of coverage by those data sets. Specifically, this analysis utilized data sets from the Correlates of War (COW) project and Penn World Tables, each of which have different start and end points as to the data covered. For example, we utilized the (COW) Intra-State War (v3.0) data set, which covers conflicts within states or incidents of civil war from 1816 to 1997.[48] The start date is not problematic, but the data ending date of 1997 limited our testing of the correlation of domestic trade to internal conflict up until and including 1997.

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[48] Meredith Sarkees, "The Correlates of War Data on War: An Update to 1997," *Conflict Management and Peace Science*, 18., 1 (2000): 123-144.

Similarly, the thesis used the (COW) Militarized Interstate Dispute (v3.1) data set, which covers all instances of when one state threatened another state, or displayed/used force against another state from 1816-2001.[49] Similar to the previous data set, the start date was not problematic and 2001 served as the last year for our analysis of the correlation between domestic trade and international conflict.

Moreover, we made use of data from the Penn World Table (PWT) data set, which contains specific state economic data on an annual basis from 1950 to 2004.[50] Since the start date for this data set is the latest, it served as the starting point for all of the testing in this thesis. Additionally, even though the PWT data set ends in 2004, the use of data beyond 2001 was limited by the two aforementioned data sets.

Taken together, this thesis featured analysis of the above data sets from 1950 to 1997 when examining the correlation between domestic trade and intra-state or civil war violence and from 1950 to 2001 when examining the correlation between domestic trade and inter-state violence. Utilizing different start dates was not a concern as the Intra-State War (v3.0) and Militarized Interstate Dispute (v3.1) data sets each examine the

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[49] Faten Ghosn, Geln Plamer, and Stuart Bremer, "The MID3 Dataset, 1993-2001: Procedures, Coding Rules, and Description," *Conflict Management and Peace Science*, no. 21 (2004): 133-154.

[50] Alan Heston, Robert Summers, and Bettina Aten, *Penn World Table Version 6.2* (Philadelphia: University of Pennsylvania, 2006). For more on the data set, see: Robert Summers and Alan Heston, "The Penn World Table (Mark 5): An Expanded Set of International Comparisons, 1950-1988," *The Quarterly Journal of Economics* 106, no. 2 (May 1991).

correlation issue from a different perspective; the former focuses on internal conflict while the latter examines international conflict.

Lastly, in order to test the hypothesis and four associated propositions, this thesis utilized a linear regression method, with the X and Y axes representing the independent and dependent variables respectively. At the conclusion of the testing, the thesis and the propositions will be proven true if there is an inverse linear or hyperbolic relationship between the two variables. The thesis will then transition to the conclusion and policy implications chapter to discuss how our conclusions can be incorporated into future policy.

C. INDEPENDENT VARIABLE

Since it is the intent of this thesis to examine the correlation between domestic trade and conflict, it was necessary to identify a means to accurately measure such trade. As aforesaid, much of the research in this field focuses on the correlation between international trade and conflict. As such, most of the methodologies are built around the flows of international trade, usually between dyadic pairs.[51] Because of this, it was necessary to identify a methodology that differed in scope by focusing specifically on the trade that takes place within a state. Working toward this end, and seeking a meaningful measure

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[51] Refer to Chapter II for an overview of previous research methodologies.

of domestic trade, the thesis relied on the research surrounding the study of civil war and trade.[52]

In doing so, we borrowed from the research methodologies of Paul Collier and Anke Hoeffler[53], and James Fearon and David Laitin[54] who use GDP in constructing their independent variable, but with slight differences in their approaches. Collier and Hoeffler, for example, argue that civil wars are sustained when the rebels have the ability to loot natural resources and threaten local populations. They go on to say that this process can be prevented if the state is strong, which they define as per capita gross domestic product. They conclude that strong states will have the bureaucratic apparatus to prevent or quell rebellions.

While Collier and Hoeffler approach civil war from a different angle, their use of GDP was useful in

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[52] The principal works in this study are: James C. Murdoch and Todd Sandler. "Economic Growth, Civil Wars, and Spatial Spillovers." *Journal of Conflict Resolution* 46, no. 1 (February 2002), James C. Murdoch and Todd Sandler. "Civil Wars and Economic Growth: Spatial Dispersion." *American Journal of Political Science* 48, no. 1 (January 2004), Paul Collier and Nicholas Sambanis. "Understanding Civil War: A New Agenda." *Journal of Conflict Resolution* 46, no. 1 (2002), Paul Collier, V.L. Elliot, Havard Hegre, Anke Hoeffler, Marta Reynal-Querol and Nicholas Sambanis. *Breaking the Conflict Trap: Civil War and Development Policy.* (New York: Oxford University Press & World Bank, 2003), Paul Collier, "On the Economic Consequences of Civil War." *Oxford Economic Papers* 51, no. 1 (1999), Mats Berdal and David M. Malone, comp. *Greed and Grievance: Economic Agendas in Civil Wars*. (Boulder: Lynne Rienner, 2000), and Resat Bayer, and Matthew C. Rupert. "Effects of Civil Wars on International Trade, 1950-92." *Journal of Peace Research* 41, no. 6 (2004).

[53] Paul Collier and Anke Hoeffler, "Greed and Grievances in Civil War," *Oxford Economic Papers*, no. 56 (2004): 563-95.

[54] James Fearon, D., and David D. Laitin, "Ethnicity, Insurgence, and Civil War," *American Political Science Review*, 97, 1 (2003): 75-90.

constructing our independent variable.[55]   The methodology of Fearon and Laitin is similar in that they use GDP as a measure of state strength, but they reject the role of commodity exports in explaining civil war.   Similar to Collier and Hoeffler, the state strength approach used by Fearon and Laitin uses GDP, as well as other empirical data, to measure state strength.[56]

Though the above two camps are separated by slight differences in methodology, both use GDP as a component of their state strength measurement, which is a central part of both arguments. They both argue that GDP lowers the risk of civil war, but differ in the reason for their findings. Collier and Hoeffler argue that a high GDP results in lower rates of poverty, which decreases the "demand" for civil war.   Fearon and Laitin, on the other hand, contend that GDP is correlated to state strength and that low rates of GDP would result in a weak state that would not be able to prevent or suppress civil war.   Though different views exist as to the relationship between GDP and the possibility of civil war, both sets of scholars show the usefulness of using GDP in their methodology. This approach was used in this thesis and expanded by examining the correlation between GDP and inter-state disputes.[57]

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[55] See Collier and Hoeffler (2004) for more on their use of GDP in creating their economic opportunity structure to explain the relationship between grievance and civil war, rebellion, and insurgence.

[56] Refer to Fearon and Laitin (2003) for the specifics on their method of measuring state strength.

[57] Ibid., 563-95.

Considering the above, the independent variable for this study is domestic trade, which we defined and quantified using the following formula:

$$\text{Domestic Trade} = C + I + G$$

The above formula is derived from the standard formula for Gross Domestic Product (GDP):

$$\text{GDP} = C + I + G + (X-M)$$

Where (C) equals consumption, (I) equals gross investment, (G) equals government spending, (X) equals exports, and (M) equals imports. To isolate domestic trade, we removed the (X-M) portion of the equation because it was not relevant for this analysis. The remaining components of GDP measure domestic absorption, or domestic expenditures and are included in the quantification of domestic trade. In addition, the subcomponents, C, I, and G, were tested independently against the dependent variable to measure the influence of each subcomponent.

This analysis utilized real per-capita GDP in order to adjust for inflation and price changes and represent the purchasing power of each member of society. Moreover, a per-capita GDP allowed our analysis to equitably compare the GDP between two or more states by considering GDP per-person and not just total GDP.

The data used to construct the independent variable is based upon the Penn World Table (Mark V).[58] Utilizing the variables from the Penn World Table, the equation is:

$$rgdpch = kc + kg + ki$$

In this formula, rgdpch is the real GDP per capita in constant years based on the 2000 United States dollar. The variables kc, kg, and ki represent consumption, government spending, and investment respectively. In order to take into account the time difference required for changes in the independent variable to show in the dependent variable, a one-year lag was applied to all GDP data. For example, economic data for the year 1999 was compared to events in 2000. The assumption was that a change in GDP, either an increase or a decrease, would take approximately one year to have an effect on the dependent variable.

D.   DEPENDENT VARIABLE

Much of the recent scholarship on the trade-conflict debate utilizes data from the Correlates of War (COW) project to construct the dependent variable. As such, this thesis defined the dependent variables (international conflict and civil war) by utilizing components of this same data set, specifically the Intra-State War and Militarized Interstate Dispute (MID) data sets.[59] While

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[58] See Robert Summers and Alan Heston, "The Penn World Table (Mark 5): An Expanded Set of International Comparisons, 1950-1988," *The Quarterly Journal of Economics* 106, no. 2 (May 1991).

[59] Meredith Sarkees, "The Correlates of War Data on War: An Update to 1997," *Conflict Management and Peace Science*, 18, 1 (2000): 123-144.

limited because the data ends in 1997, both are well respected and have been used for constructing the dependent variable in many previous studies. This time-series data is important, as it provided a large number (N) of observations to compare with the independent variable.[60]

Specifically, this analysis utilized two data sets from the Correlates of War (COW) project. We used the (COW) Intra-State War (v3.0) data set, which covers conflicts within states or incidents of civil war between 1816 and 1997.[61] Since the end year for this data set is

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[60] See the following for empirical studies utilizing the COW data set: Bruce Russett, *International Regions and the International System*. (Chicago: Rand McNally, 1967), Peter Wallensteen, *Structure and War: On International Relations 1920-1968*. (Stockholm: Raben & Sjogren, 1973), Solomon W. Polachek, "Conflict and Trade." *The Journal of Conflict Resolution* 24, no. 1 (March 1980), Solomon W. Polachek and Judith McDonald. "Strategic Trade and the Incentive for Cooperation." In *Disarmament, Economic Conversion, and Management of Peace*, ed. Manas Chatterji and Linda Rennie Forcey, 273-284. (New York: Praeger, 1992), Solomon W. Polachek, "Why Democracies Cooperate More and Fight Less: The Relationship Between International Trade and Cooperation." *Review of International Economics* 5, no. 3 (1997), Mark Gasiorowski and Solomon W. Polachek, "Conflict and Interdependence: East-West Trade and Linkages in the Era of Detente." *The Journal of Conflict Resolution* 26, no. 4 (December 1982), and Mark J. Gasiorowski, "Economic Interdependence and International Conflict: Some Cross-National Evidence." *International Studies Quarterly* 30, no. 1 (March 1986): 23-38. For MIDSs see: John R. Oneal and Bruce Russett. "Assessing the Liberal Peace with Alternative Specifications: Trade Still Reduces Conflict." *Journal of Peace Research* 36, no. 4 (July 1999), John R. Oneal and James Lee Ray, "New Test of the Democratic Peace: Controlling for Economic Interdependence, 1950-85." *Political Research Quarterly* 50, no. 4 (December 1997), John R. Oneal and Bruce M. Russett. "The Classical Liberals Were Right: Democracy, Interdependence, and Conflict, 1950-1985." *International Studies Quarterly* 41, no. 2 (June 1997), John R. Oneal, Frances H. Oneal, Zeev Moaz and Bruce Russett. "The Liberal Peace: Interdependence, Democracy, and International Conflict." *Journal of Peace Research* 33, no. 1 (February 1996), and Katherine Barbieri, "Sleeping with the Enemy: The Impact of War on Trade," *Journal of Political Research* 36, no. 4 (1999).

[61] For the specific criterion for this data set, see: Meredith Sarkees, "The Correlates of War Data on War: An Update to 1997," *Conflict Management and Peace Science*, 18, 1 (2000): 123-144.

1997, this thesis focused on testing the correlation between domestic trade and internal conflict up to and including that year.

Similarly, the thesis used the (COW) Militarized Interstate Dispute (v3.1) data set which covers all instances of when one state threatened another state, or displayed/used force against another state from 1816-2001.[62] Similar to the previous data set, 2001 is the last covered year and thus served as the end year for our analysis of the correlation between domestic trade and international conflict.

E. CONTROL VARIABLES

In keeping with the scholarly literature in the international trade-conflict and civil war fields, this thesis controlled for certain peculiarities by incorporating regime type, geographical proximity, and military capability ratios into our testing.

1. Regime Type

Fearon and Laitin[63] and Doyle[64] point out that political instability, and by extension the "liberalness" of a state, may be an indicator of state oppression and

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[62] For the specific criterion for this data set see: Faten Ghosn, Geln Plamer, and Stuart Bremer, "The MID3 Dataset, 1993-2001: Procedures, Coding Rules, and Description," *Conflict Management and Peace Science*, no. 21 (2004): 133-154.

[63] James Fearon, D., and David D. Laitin, "Ethnicity, Insurgence, and Civil War," *American Political Science Review*, 97, 1 (2003): 75-90.

[64] Michael Doyle, "Ideologies and Politics: Liberal Democracy and National Dictatorship in Peace and War," in *War and Peace in the 20th Century and Beyond*, ed. Geir Lundestad and Olav Njolstad (Singapore: World Scientific Publishing Co. Pte. Ltd, 2002): 52-75.

strength, and thus, its ability to prevent or quell rebellion or civil war. As such, a state that is not considered "liberal" may experience rebellion or civil war at a higher rate than states classified as liberal.[65] This thesis sought to control for regime type by adopting Doyle's approach of measuring states according to four "Kantian" intuitions: "market and private property economies; polities that are externally sovereign; citizens who possess juridical rights; and 'republican' (whether republican or parliamentary monarchy), representative, government.[66]" Based on this approach, states considered liberal received a score of 1 and states considered "otherwise" received a score of 0.

2. Region

Russett and Oneal and Ray contend that states that have strong economic ties are half as likely to initiate inter-state conflict toward each other compared to dyads with weak or non-existent trade relationships.[67] Moreover, his research found that the level of dyadic trade was correlated to geographical proximity and contiguity. This

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[65] Havard Hegre, Tanja Ellingsen, Scott Gates, and Niles Gleditsch, "Toward a Democratic Civil Peace? Democracy, Political Change, and Civil War, 1816-1992," *American Political Science Review*, no. 95 (2001): 33-48.

[66] Michael Doyle, "Ideologies and Politics: Liberal Democracy and National Dictatorship in Peace and War," in *War and Peace in the 20th Century and Beyond*, ed. Geir Lundestad and Olav Njolstad (Singapore: World Scientific Publishing Co. Pte. Ltd, 2002): 60.

[67] See: Bruce Russett, *International Regions and the International System* (Chicago: Rand McNally, 1967), and John R. Oneal and James Lee Ray, "New Test of the Democratic Peace: Controlling for Economic Interdependence, 1950-85," *Political Research Quarterly* 50, no. 4 (December 1997).

means, by extension, that geographical proximity and inter-state conflict are correlated. As such, we included in our testing the means to determine the region of the World in which each state in our testing belonged. We used the 2009 World Bank Development Indicators (WDI), which in addition to acting as a global benchmark for development, assign states to one of six global regions.[68]

3.   Military Capability Ratio

Henderson and Singer, Singer et al, Bremer, Oneal and Russett, Oneal et al, and Spiro each include the military capability ratio in their analyses.[69] The ratio is from the COW National Military Capabilities (v3.02) data set which measures six different elements of national power: energy consumption, steel and iron production, military expenditure, military personnel, total population, and

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[68] The World Bank, "World development Indicators 2009," April 22, 2009,
http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/0,,contentMDK:2
1725423~pagePK:64133150~piPK:64133175~theSitePK:239419,00.html
(accessed May 01, 2009).   In addition, see: Douglas M. Stinnett, Jaroslav Tir, Philip Schafer, Paul F. Diehl, and Charles Gochman, "The Correlates of War Project Direct Contiguity Data, Version 3," *Conflict Management and Peace Science*, 2, 19 (2002): 58-66.

[69] See: Errol A. Henderson and J. David Singer, "Civil War in the Post-Colonial World, 1946-1992," *Journal of Peace Research*, no. 37 (2000): 275-99, David J. Singer, Stuart Bremer, and John Stuckey, "Capability, Distribution, Uncertainty, and Major Power War, 1820-1965," in *Peace, War, and Numbers*, ed. Bruce M. Russett (Beverly Hills: Sage, 1972): 19-48, Stuart Bremer, "Dangerous Dyads," *Journal of Conflict Resolution* 36, no. 2 (June 1992): 309-41, John R. Oneal and Bruce Russett, "Assessing the Liberal Peace with Alternative Specifications: Trade Still Reduces Conflict," *Journal of Peace Research* 36, no. 4 (July 1999), John R. Oneal, Frances H. Oneal, Zeev Moaz and Bruce Russett. "The Liberal Peace: Interdependence, Democracy, and International Conflict." *Journal of Peace Research* 33, no. 1 (February 1996), and David Spiro, "The Insignificance of the Liberal Peace," *International Security*, no. 19 (1994): 50-86.

urban population.[70] These elements are also combined in an equally weighted formula to produce a state's Composite Index of National Capability (CINC). Singer and Small use the CINC to compare the ratio of two dyadic states to determine the ratio between the two CINC scores.[71] In its subparts, the measure of a state's total population and military expenditure can also be used to control variances between large and small states as well as the effect of militarization on rebellion and civil war.[72]

F. PROPOSITIONS AND TESTING

The following two propositions comprised the overall thesis for our analysis and were each tested independently utilizing the above methodology and control variables. In this section, we will outline the manner in which the following propositions were tested.

1. (P.1) High levels of domestic trade will lower a state's propensity to initiate a militarized inter-state dispute.

In testing P.1, we examined the relationship between the independent variable (domestic trade) and the dependent variable (the COW MID data set). We also utilized the control variables (regime type, geographical proximity, and military capability ratio) so as to include the

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[70] David J. Singer, Stuart Bremer, and John Stuckey, "Capability, Distribution, Uncertainty, and Major Power War, 1820-1965," in *Peace, War, and Numbers*, ed. Bruce M. Russett (Beverly Hills: Sage, 1972).

[71] J. David and Melvin Small Singer, "Alliance Aggregation and the Onset of War, 1816-1965," in *Quantitative International Politics*, ed. David Singer (New York: Free Press, 1968): 247-86.

[72] Paul Collier et al., *Breaking the Conflict Trap: Civil War and Development Policy* (Washington, DC: World Bank, 2003).

subcomponent population. As mentioned previously, we built a one-year lag into our testing in order for changes in the independent variable to be seen in the dependent variable. In testing this proposition, we were expecting that the independent variable would decrease prior to an increase in conflict intensity in the dependent variable.

2. (P.2) High levels of domestic trade will lower a state's propensity to fall into civil war.

In testing P.2, we examined the relationship between the independent variable (domestic trade) and the dependent variable (the COW Intra-State War v3.0 data set). We also utilized the control variables (regime type and military capability ratio) so as to include the subcomponent population and military expenditures. As with P.1, we built a one-year lag into our testing in order for changes in the independent variable to be seen in the dependent variable. In testing this proposition, we expected that the independent variable would decrease prior to the initiation of rebellion or civil war in the dependent variable.

G. METHOD FOR TESTING

In conducting the above testing, we utilized the statistical software, SPSS Statistics 17.0.

H. SUMMARY AND DATA SETS

In testing the correlation between domestic trade and violence, both inter- and intra-state, the research methodology for this thesis took the form of qualitative statistical analysis of both previously collected conflict data sets and published economic data. Specifically, we utilized a cross-sectional analysis of pooled time-series

data in order to conduct tests on 180 states from 1950 to 2004, which resulted in 9,735 testable cases. The cases, which were the independent variable (rgdpch), were pulled from and defined by the Penn World Table (Mark V). The dependent variables were defined as (hostscore) and (civilwar). They were drawn from two data sets: the Militarized Interstate Dispute (v3.1) data set and the (COW) Intra-State War (v3.0) data set. The study employed three control variables: regime type, geographical region, and military capability ratio so as to include their six subcomponents for testing the study's two propositions via SPSS statistical software. Appendix A shows the codebook for our research and provides greater detail on the particulars of each variable.

IV. TESTING AND RESULTS

A. INTRODUCTION

Utilizing the methodology described in the previous chapter, this chapter will discuss the testing and results. Specifically, we will describe the tests for each of the two propositions that comprise the overall hypothesis for the thesis. In doing so, we will test each of the propositions utilizing linear regression to determine the correlation between the independent and dependent variables and then, using the aforesaid control variables, control for or isolate certain characteristics that may influence the overall results of the tests. We conducted additional tests to explore unexpected results from the initial regression testing.

B. CORRELATION OF VARIABLES

The first test was an analysis of the Pearson Correlation between all of the variables: dependent, independent, and control. The results are displayed in table one.

Correlations

		rgdpch	kc	kg	ki	liberal	tpop	cinc	hostscore	civilwar
rgdpch	Pearson Correlation	1	-.471**	-.194**	.319**	.307**	-.060**	.129**	-.036**	-.128**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.003	.000
	N	6909	6909	6909	6909	5841	6013	6013	6909	6909
kc	Pearson Correlation	-.471**	1	-.047**	-.159**	-.220**	-.104**	-.117**	-.036**	.057**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.003	.000
	N	6909	6909	6909	6909	5841	6013	6013	6909	6909

kg	Pearson Correlation	-.194**	-.047**	1	-.085**	-.150**	.012	-.049**	.052**	.015
	Sig. (2-tailed)	.000	.000		.000	.000	.348	.000	.000	.220
	N	6909	6909	6909	6909	5841	6013	6013	6909	6909
ki	Pearson Correlation	.319**	-.159**	-.085**	1	.372**	.073**	.133**	.056**	-.134**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.000	.000
	N	6909	6909	6909	6909	5841	6013	6013	6909	6909
liberal	Pearson Correlation	.307**	-.220**	-.150**	.372**	1	.047**	.112**	-.006	-.101**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.621	.000
	N	5841	5841	5841	5841	6604	6604	6604	6604	6604
tpop	Pearson Correlation	-.060**	-.104**	.012	.073**	.047**	1	.627**	.291**	.002
	Sig. (2-tailed)	.000	.000	.348	.000	.000		.000	.000	.866
	N	6013	6013	6013	6013	6604	6781	6781	6781	6781
cinc	Pearson Correlation	.129**	-.117**	-.049**	.133**	.112**	.627**	1	.363**	-.023
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000	.055
	N	6013	6013	6013	6013	6604	6781	6781	6781	6781
hostscore	Pearson Correlation	-.036**	-.036**	.052**	.056**	-.006	.291**	.363**	1	.130**
	Sig. (2-tailed)	.003	.003	.000	.000	.621	.000	.000		.000
	N	6909	6909	6909	6909	6604	6781	6781	9735	9735
civilwar	Pearson Correlation	-.128**	.057**	.015	-.134**	-.101**	.002	-.023	.130**	1
	Sig. (2-tailed)	.000	.000	.220	.000	.000	.866	.055	.000	
	N	6909	6909	6909	6909	6604	6781	6781	9735	9735

**. Correlation is significant at the 0.01 level (2-tailed).

Table 1.   Correlation of Variables.

The above table yields important and interesting results as to the correlation between each of the variables, but in no way provides the final results for this analysis. Those results will be procured by using linear regression analysis.

1.   Correlation of (rgdpch) and Sub-Components

The independent variable (rgdpch), which is used to test both propositions, shows a negative correlation with the dependent variable (hostscore) of -0.36. This result is statistically significant. Additionally, the same variable (rgdpch) is negatively correlated to the dependent variable (civilwar) at -.128, which is also statistically significant. From this, we can generalize that as a state's (rgdpch) increases, its propensity to initiate inter-state conflict or to fall into civil war will decrease. It is also interesting to note the correlation between (rgdpch) and (liberal) of 0.307, which is not only statistically significant, but is also expected. States with a rising or elevated (rgdpch) will generally show an increase in political liberalization. The sub-components of the variable, (rgdpch), are (kc), (kg), and (ki). We compared each of these to the dependent variables, (hostscore) and (civilwar). Examining the relationship between the sub-components and (hostscore), we found that all three are correlated to the dependent variable: (kc) -.036, (kg) .052, and (ki) .056. All are statistically significant relationships. Based on these results, we can generalize that as the consumption portion of (rgdpch) increases, that state's propensity to initiate inter-state conflict decreases. However, as the government spending and

investment portion of (rgdpch) increases, a state's propensity to initiate inter-state conflict decreases. The relationship between the sub-components of (rgdpch) and (hostscore) are opposite to the correlation between the subcomponents and the dependent variable, (civilwar). In this case, the relationship between the sub-components and (civilwar) are (kc) .057, (kg) 0.15, and (ki) -.134. The correlation for (kc) and (ki) is statistically significant, but the correlation for (kg) is not. From these, we can generalize that, as the investment portion of (rgdpch) increases, that state's propensity to fall into civil war decreases. However, as the consumption portion of (rgdpch) increases, a state's propensity to fall into civil war increases.

Considering the above results, we can conclude that as (rgdpch) increases, the propensity of a state to initiate inter-state conflict or fall into civil war will decrease. The results for the sub-components of (rgdpch) are not uniform in their correlation. However, they still produce statistically significant results that allow us to generalize that as a state's consumption portion of (rgdpch) increases, the propensity of that state to initiate inter-state conflict will decrease. Similarly, as the investment portion of (rgdpch) increases, the state's propensity to fall into civil war will decrease.

2.   Correlation of (liberal)

The control variable, (liberal), which is used as a control in our analysis, shows a negative correlation to the dependent variable (hostscore) of -.006. This result is not statistically significant. However, it does show a

-.101 correlation with the dependent variable, (civilwar), which is statistically significant. This result is very interesting in that it shows that liberal and non-liberal states have a near equal propensity to initiate inter-state conflict. The results of this correlation analysis are robust because of the large N (6,604 cases). This result is extremely interesting as many continue to debate the theory of democratic peace.[73] While this result does not specifically address the theory of democracies fighting one another, it does address the debate over initiation of inter-state conflict. The debate features one side arguing that liberal states are less likely to initiate inter-state conflict. The other side maintains that non-liberal states are more likely to initiate inter-state conflict.[74] As a result of our testing, we can generalize that liberal and non-liberal states have a near equal propensity to initiate inter-state conflict. The correlation of (liberal) to

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[73] For more on the democratic peace theory, see: Dean V. Babst, , "A Force for Peace," *Industrial Research* (1972), Melvin Small and David J. Singer, "The War Proneness of Democratic Regimes, 1816-1965," *Jerusalem Journal of International Relations*, no. 1 (1976), Zeev Maoz and Nasrin Abdolali, "Regime Types and International Conflict, 1816-1976," *Journal of Conflict Resolution* (1989), Stuart A. Bremer, , "Democracy and Militarized Interstate Conflict, 1816-1965," *International Interactions*, no. 18 (1993), and Zeev Maoz and Bruce Russett, "Normative and Structural Causes of Democratic Peace, 1946-1986," *American Political Science Review*, no. 87 (1993).

[74] For arguments that non-liberal states initiate conflict towards democracies more than democracies initiate conflict toward non-liberal states see: Dan Reiter and Allan C Stam, "Identifying the Culprit: Democracy, Dictatorship, and Dispute Initiation," *American Political Science Review*, no. 97 (2003). For arguments that liberal states initiate intra-state conflicts toward non-liberal states more than non-liberal states initiate intra-state conflict towards each other see: Stephen L. Quackenbush and Michael Rudy, "Evaluating The Monadic Democratic Peace," *Paper Presented at the Annual Meeting of the Midwest Political Science Association, Chicago, Illinois* (April 20-23, 2006). http://www.missouri.edu/~polswww/papers/monadic%20democratic%20peace_MP SA_.pdf (accessed April 30, 2009).

(civilwar) is statistically significant and shows that liberal states are less likely than non-liberal states to fall into civil war.[75] These results are in keeping with the most recent scholarship on the effects of liberal governments on domestic violence and civil war.

3.   Correlation of (cinc)

The control variable (cinc), which is a measure of a state's military power, shows a positive correlation of .363 when compared to the dependent variable, (hostscore), which is statistically significant. The control variable (cinc) shows a negative correlation of -.023 when compared to the dependent variable, (civilwar), which is statistically insignificant.   Not considering the correlation to (civilwar) due to the insignificance of its correlation, we can generalize that as a state's military capability increases so does its propensity to initiate inter-state conflict.

C.   TESTING (P.1) HIGH LEVELS OF DOMESTIC TRADE WILL LOWER A STATE'S PROPENSITY TO INITIATE A MILITARIZED INTER-STATE DISPUTE

After testing the correlation between the variables (independent, dependent, and control), we tested the first proposition of the hypothesis which argues that high levels

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[75] For more in the effect of liberal governments on domestic violence see: Havard Hegre, Tanja Ellingsen, Scott Gates, and Niles Gleditsch, "Toward a Democratic Civil Peace? Democracy, Political Change, and Civil War, 1816-1992," *American Political Science Review*, no. 95 (2001): 33-48, Barbara Harff, "No Lessons Learned From The Holocaust? Assessing Risks of Genocide and Political Mass Murder Since 1955," *American Political Science Review* 97, no. 1 (2003), and Christian Davenport, and David A Armstrong II, "Democracy and The Violation of Human Rights: A Statistical Analysis From 1976 to 1996," *American Journal of Political Science* 48, no. 3 (2004).

of domestic trade will lower a state's propensity to initiate a militarized inter-state dispute. Unlike the correlation analysis of the previous section, this test uses linear regression to test the proposition.

1.   Regression of (P.1) with No Control Variables

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	rgdpch[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: hostscore

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.036[a]	.001	.001	5.264

a. Predictors: (Constant), rgdpch

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	244.711	1	244.711	8.831	.003[a]
	Residual	191392.158	6907	27.710		
	Total	191636.869	6908			

a. Predictors: (Constant), rgdpch

b. Dependent Variable: hostscore

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.570	.084		30.484	.000
	rgdpch	-2.378E-5	.000	-.036	-2.972	.003

a. Dependent Variable: hostscore

Table 2.   Regression of (P.1), No Control Variables.

Analysis of Table 2 shows that the variances in the dependent variable, (hostscore), can be explained by variances in the independent variable, (rgdpch), less than one percent of the time. Though the standard error is 5.26 percent, the R-square and adjusted R-square are .001, which shows that the linear relationship between the two variables is statistically insignificant. Examining the ANOVA, we find that the F of 8.831 is significant at .003, which is less than the alpha of .05. From this, the ANOVA shows that (rgdpch) is a reliable predictor of change in (hostscore). The coefficients for the test show that there is an inverse relationship between the two variables, in that for every unit of change in (rgdpch), there will be 2.38 units of change in (hostscore). This is also statistically significant due to the p-value being below alpha. From this test, we can conclude that (rgdpch) has a statistically insignificant linear relationship with (hostscore). Even though the R-square is not significant, (rgdpch) is a reliable predictor of variance in (hostscore). For every unit of change in (rgdpch), there is a greater than double change in (hostscore). From these results, we determine that (P.1) is proved true in that high levels of domestic trade will lower a state's propensity to initiate an inter-state dispute.

rgdpch vs. hostscore Scatter Plot

: R² Linear = 0.001
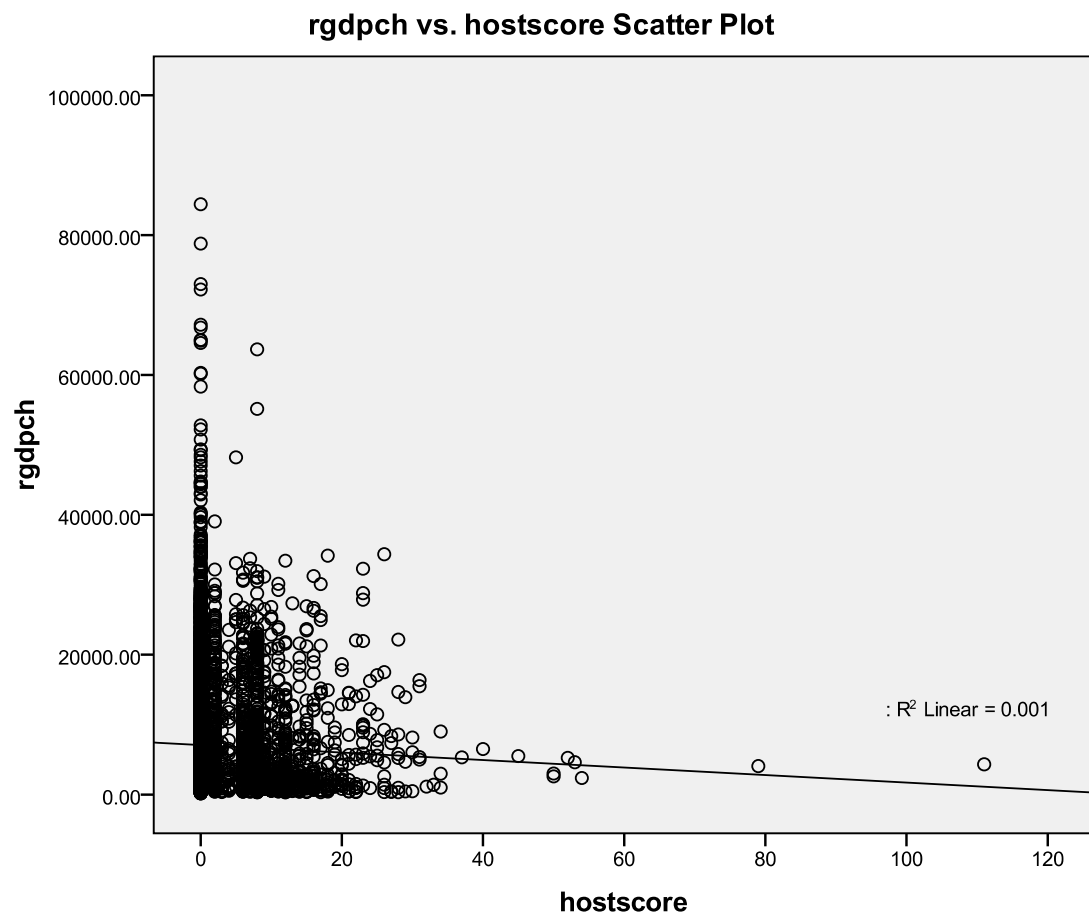
Figure 1.   (rgdpch) vs. (hostscore) Scatter Plot.

Figure 1 is a graphical representation of the linear
regression test conducted between (rgdpch) and (hostscore).

2. Regression of (P.1) and Controlling for Non-(liberal) States

Variables Entered/Removed[b,c]

Model	Variables Entered	Variables Removed	Method
1	rgdpch[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: hostscore

c. Models are based only on cases for which liberal = 0

Model Summary

Model	R liberal = 0 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.091[a]	.008	.008	5.644

a. Predictors: (Constant), rgdpch

ANOVA[b,c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	943.966	1	943.966	29.636	.000[a]
	Residual	112439.437	3530	31.853		
	Total	113383.403	3531			

a. Predictors: (Constant), rgdpch

b. Dependent Variable: hostscore

c. Selecting only cases for which liberal = 0

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.081	.114		27.092	.000
	rgdpch	-6.908E-5	.000	-.091	-5.444	.000

a. Dependent Variable: hostscore

b. Selecting only cases for which liberal = 0

Table 3.   Regression of (P.1), with Non-(liberal) States.

Analysis of Table 3 shows that the variances in the dependent variable, (hostscore), while controlling for Non-(liberal) states, can be explained by variances in the independent variable, (rgdpch), less than one percent of the time. Though the standard error is 5.64 percent, the R-square and adjusted R-square is .008, which shows that the linear relationship between the two variables is statistically insignificant. Examining the ANOVA, we find that the F of 29.636 is significant at .000, which is less than the alpha of .05. Based on this result, the ANOVA shows that (rgdpch) is a reliable predictor of change in (hostscore). The coefficients for the test show that there is an inverse relationship between the two variables. For every unit of change in (rgdpch), there will be 6.91 units of change in (hostscore). This is also statistically significant due to the p-value being below alpha. From this test, we can conclude that (rgdpch), when controlling for Non-(liberal) states, has a statistically insignificant linear relationship with (hostscore). Even though the R-square is not significant, (rgdpch) is a reliable predictor of variance in (hostscore). For every unit of change in (rgdpch), there is nearly seven times the change in (hostscore). From these results, we determine that (P.1) is proved true in that high levels of domestic trade, when controlled for Non-(liberal) states, will lower a state's propensity to initiate an inter-state dispute. Additionally, when controlling for Non-(liberal) states, changes in (rgdpch) will have a greater effect on (hostscore) than no changes in (rgdpch).

3. Regression of (P.1) and Controlling for (liberal) States

Variables Entered/Removed[b,c]

Model	Variables Entered	Variables Removed	Method
1	rgdpch[a]		. Enter

a. All requested variables entered.

b. Dependent Variable: hostscore

c. Models are based only on cases for which liberal = 1

Model Summary

Model	R liberal = 1 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.044[a]	.002	.001	5.451

a. Predictors: (Constant), rgdpch

ANOVA[b,c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	130.454	1	130.454	4.391	.036[a]
	Residual	68536.348	2307	29.708		
	Total	68666.802	2308			

a. Predictors: (Constant), rgdpch

b. Dependent Variable: hostscore

c. Selecting only cases for which liberal = 1

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.502	.195		12.828	.000
	rgdpch	3.416E-5	.000	.044	2.096	.036

a. Dependent Variable: hostscore

b. Selecting only cases for which liberal = 1

Table 4.   Regression of (P.1), with (liberal) States.

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Analysis of table four shows that the variances in the dependent variable, (hostscore), while controlling for (liberal) states, can be explained by variances in the independent variable, (rgdpch), less than one percent of the time. Though the standard error is 5.45 percent, the R-square and adjusted R-square are .002 and .001 respectively. This shows that the linear relationship between the two variables is statistically insignificant. Examining the ANOVA, we find that the F of 4.391 is significant at .036, which is less than the alpha of .05. Based on this result, the ANOVA shows that (rgdpch) is a marginal predictor of change in (hostscore). The coefficients for the test show that there is an inverse relationship between the two variables, in that for every unit of change in (rgdpch), there will be 3.41 units of change in (hostscore). This is also statistically significant due to the p-value being below alpha. From this test, we can conclude that (rgdpch), when controlling for (liberal) states, has a statistically insignificant linear relationship with (hostscore). Even though the R-square is not significant, (rgdpch) is a marginal predictor of variance in (hostscore) and that for every unit of change in (rgdpch), there is more than three times the change in (hostscore). From these results, we determine that (P.1) is proved true in that high levels of domestic trade, when controlled for (liberal) states, will lower a state's propensity to initiate an inter-state dispute. Additionally, when controlling for (liberal) states, changes in (rgdpch) will have a greater effect on (hostscore) than no changes in (rgdpch).

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4.   Regression of (P.1) and Controlling for (cinc)

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	cinc, rgdpch[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: hostscore

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.357[a]	.127	.127	5.193

a. Predictors: (Constant), cinc, rgdpch

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23599.066	2	11799.533	437.523	.000[a]
	Residual	162083.176	6010	26.969		
	Total	185682.241	6012			

a. Predictors: (Constant), cinc, rgdpch

b. Dependent Variable: hostscore

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.563	.091		28.249	.000
	rgdpch	-5.899E-5	.000	-.082	-6.736	.000
	cinc	91.513	3.109	.358	29.432	.000

a. Dependent Variable: hostscore

Table 5.   Regression of (P.1), Controlling for (cinc).

Analysis of Table 5 shows that the variances in the dependent variable (hostscore), while controlling for (cinc) states, can be explained by variances in the independent variable, (rgdpch), nearly thirteen percent of the time. Though the standard error is 5.19 percent, the R-square and adjusted R-square are .127, which shows that the linear relationship between the two variables is statistically insignificant. Examining the ANOVA, we find that the F of 437.523 is significant at .000, which is less than the alpha of .05. From this, the ANOVA shows that (rgdpch) is a significant predictor of change in (hostscore). The coefficients for the test show that there is an inverse relationship between the two variables, in that for every unit of change in (rgdpch), there will be 5.89 units of change in (hostscore). This is also statistically significant due to the p-value being below alpha. From this test, we can conclude that (rgdpch), when controlling for (cinc) states, has a statistically insignificant linear relationship with (hostscore). Even though the R-square is not significant, (rgdpch) is a significant predictor of variance in (hostscore) and that for every unit of change in (rgdpch) there is nearly six times the change in (hostscore). From these results, we determine that (P.1) is proved true in that high levels of domestic trade, when controlled for (cinc), will lower a state's propensity to initiate an inter-state dispute.

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5.   Regression of (P.1) and Controlling for (tpop)

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	tpop, rgdpch[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: hostscore

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.284[a]	.081	.081	5.329

a. Predictors: (Constant), tpop, rgdpch

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15025.385	2	7512.693	264.574	.000[a]
	Residual	170656.856	6010	28.395		
	Total	185682.241	6012			

a. Predictors: (Constant), tpop, rgdpch

b. Dependent Variable: hostscore

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.411	.095		25.372	.000
	rgdpch	-1.359E-5	.000	-.019	-1.522	.128
	tpop	1.436E-5	.000	.283	22.820	.000

a. Dependent Variable: hostscore

Table 6.   Regression of (P.1), Controlling for (tpot).

Analysis of Table 6 shows that the variances in the dependent variable (hostscore), while controlling for (tpop) states, can be explained by variances in the independent variable, (rgdpch), nearly thirteen percent of the time. Though the standard error is 5.32 percent, the R-square and adjusted R-square are .081, which shows that the linear relationship between the two variables is statistically insignificant. Examining the ANOVA, we find that the F of 264.576 is significant at .000, which is less than the alpha of .05. From this, the ANOVA shows that (rgdpch) is a significant predictor of change in (hostscore). The coefficients for the test show that there is an inverse relationship between the two variables, in that for every unit of change in (rgdpch) there will be 1.36 units of change in (hostscore). This is not statistically significant due to the p-value of .128 being above alpha. From this test, we can conclude that (rgdpch), when controlling for (tpop) states, has a statistically insignificant linear relationship with (hostscore). Even though the R-square is not significant, (rgdpch) is a significant predictor of variance in (hostscore) and that for every unit of change in (rgdpch), there is nearly two times the change in (hostscore). However, the predicted value change in (hostscore) is not statistically significant. The above results are inconclusive in that there is no linear relationship. The ANOVA shows that (rgdpch), when controlled for (tpop), is a significant predictor of variance in (hostscore), but that this variance is insignificant.

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6. Regression of (P.1) and Controlling for (region)

Model Summary

Model	R region = 1 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.215[a]	.046	.045	5.020

a. Predictors: (Constant), rgdpch

Model Summary

Model	R region = 2 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.140[a]	.020	.019	4.309

a. Predictors: (Constant), rgdpch

Model Summary

Model	R region = 3 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.060[a]	.004	.003	3.047

a. Predictors: (Constant), rgdpch

Model Summary

Model	R region = 4 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.196[a]	.038	.037	9.428

a. Predictors: (Constant), rgdpch

Model Summary

Model	R region = 5 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.219[a]	.048	.039	8.997

a.   Predictors: (Constant), rgdpch

Model Summary

Model	R region = 1 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.215[a]	.046	.045	5.020

Model Summary

Model	R region = 6 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.050[a]	.002	.000	5.619

a.   Predictors: (Constant), rgdpch

Model Summary

Model	R region = 7 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.053[a]	.003	.002	3.603

a. Predictors: (Constant), rgdpch

Table 7.   Regression of (P.1), Controlling for (region).

Analysis of table seven shows the linear relationship between the two variables when controlling for (region). By utilizing linear regression, we can conclude that (rgdpch) has an insignificant linear relationship with (hostscore). While this test does not support (P.1), the results are consistent with the previous results in which all the tests produced a statistically insignificant linear relationship between the two variables.   As such, we conclude that there is a statistically insignificant linear relationship between domestic trade and inter-state disputes when controlling for region.

D. TESTING (P.2) HIGH LEVELS OF DOMESTIC TRADE WILL LOWER A STATE'S PROPENSITY TO FALL INTO CIVIL WAR

Following the tests of (P.1), we will in like manner test the second proposition of the hypothesis, which argues that high levels of domestic trade will lower a state's propensity to fall into civil war.

1. Regression of (P.2) with No Control Variables

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	rgdpch[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: civilwar

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.128[a]	.016	.016	.198

a. Predictors: (Constant), rgdpch

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.457	1	4.457	114.149	.000[a]
	Residual	269.704	6907	.039		
	Total	274.161	6908			

a. Predictors: (Constant), rgdpch

b. Dependent Variable: civilwar

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.064	.003		20.132	.000
	rgdpch	-3.209E-6	.000	-.128	-10.684	.000

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	rgdpch[a]	.	Enter

a. All requested variables entered.

a. Dependent Variable: civilwar

Table 8.   Regression of (P.2), No Control Variables.

        Table 8 shows that the variances in the dependent
variable, (civilwar), can be explained by variances in the
independent variable, (rgdpch), 1.6 percent of the time.
Though the standard error is small at .198 percent, the R-
square and adjusted R-square are .016, which shows that the
linear   relationship   between   the   two   variables   is
statistically insignificant. Examining the ANOVA, we find
that the F of 114.149 is significant at .000, which is less
than the alpha of .05.   From this, the ANOVA shows that
(rgdpch)   is   a   significant   predictor   of   change   in
(civilwar). The coefficients for the test show that there
is an inverse relationship between the two variables, in
that for every unit of change in (rgdpch), there will be
3.20   units   of   change   in   (hostscore).   This   is   also
statistically significant due to the p-value being below
alpha. From this test, we can conclude that (rgdpch) has a
statistically   insignificant   linear   relationship   with
(civilwar).   Even though the R-square is not significant,
(rgdpch)   is   a   significant   predictor   of   variance   in
(civilwar) and that for every unit of change in (rgdpch),
there is more than three times the change in (civilwar).
From these results, we determine that (P.2) is proved true

in that high levels of domestic trade will lower a state's
propensity to fall into civil war.

rgdpch vs. civilwar Scatter Plot
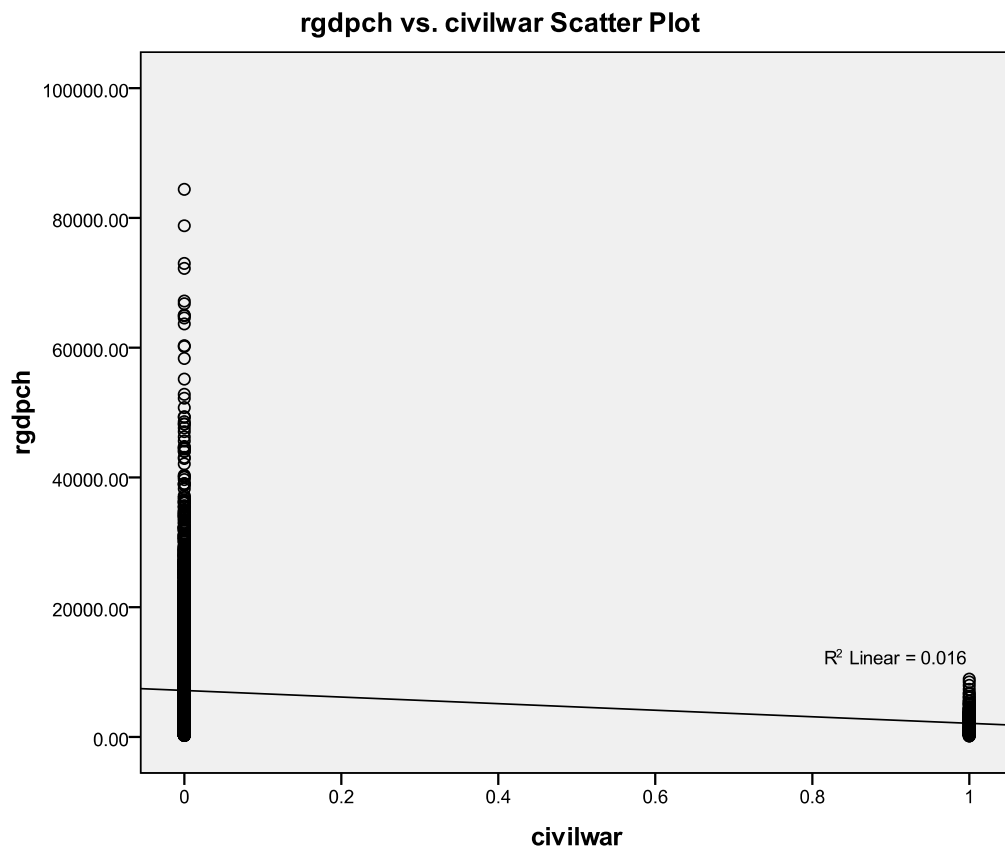
Figure 2.   (rgdpch) vs. (civilwar) Scatter Plot.

Figure 2 is a graphical representation of the linear
regression test conducted between (rgdpch) and (civilwar).

2. Regression of (P.2) and Controlling for (liberal) States

Variables Entered/Removed[b,c]

Model	Variables Entered	Variables Removed	Method
1	rgdpch[a]		. Enter

a. All requested variables entered.

b. Dependent Variable: civilwar

c. Models are based only on cases for which liberal = 1

Model Summary

Model	R liberal = 1 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.131[a]	.017	.017	.144

a. Predictors: (Constant), rgdpch

ANOVA[b,c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.845	1	.845	40.538	.000[a]
	Residual	48.073	2307	.021		
	Total	48.917	2308			

a. Predictors: (Constant), rgdpch

b. Dependent Variable: civilwar

c. Selecting only cases for which liberal = 1

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.048	.005		9.372	.000
	rgdpch	-2.748E-6	.000	-.131	-6.367	.000

a. Dependent Variable: civilwar

b. Selecting only cases for which liberal = 1

Table 9.   Regression of (P.2), with (liberal) States.

Table 9 shows that the variances in the dependent variable (civilwar), when controlling for (liberal) states, can be explained by variances in the independent variable (rgdpch), 1.7 percent of the time. Though the standard

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error is small at .144 percent, the R-square and adjusted R-square are .017, which shows that the linear relationship between the two variables is statistically insignificant. Examining the ANOVA, we find that the F of 40.538 is significant at .000, which is less than the alpha of .05. From this, the ANOVA shows that (rgdpch), when controlled for (liberal) states, is a significant predictor of change in (civilwar). The coefficients for the test show that there is an inverse relationship between the two variables, in that for every unit of change in (rgdpch), there will be 2.74 units of change in (civilwar). This is also statistically significant due to the p-value being below alpha. From this test, we can conclude that (rgdpch) has a statistically insignificant linear relationship with (civilwar). Even though the R-square is not significant, (rgdpch) is a significant predictor of variance in (civilwar) and that for every unit of change in (rgdpch), there is nearly three times the change in (civilwar). From these results, we determine that (P.2) is proved true in that high levels of domestic trade will lower a state's propensity to fall into civil war. Additionally, when controlling for (liberal) states, changes in (rgdpch) will have a lesser effect on (civilwar) than no changes in (rgdpch).

3.   Regression of (P.2) and Controlling for Non-(liberal) States

Variables Entered/Removed[b,c]

Model	Variables Entered	Variables Removed	Method
1	rgdpch[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: civilwar

c. Models are based only on cases for which liberal = 0

Model Summary

Model	R liberal = 0 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.112[a]	.013	.012	.248

a. Predictors: (Constant), rgdpch

ANOVA[b,c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.754	1	2.754	44.873	.000[a]
	Residual	216.611	3530	.061		
	Total	219.364	3531			

a. Predictors: (Constant), rgdpch

b. Dependent Variable: civilwar

c. Selecting only cases for which liberal = 0

Coefficients[a,b]

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.085	.005		17.016	.000
	rgdpch	-3.731E-6	.000	-.112	-6.699	.000

a. Dependent Variable: civilwar

b. Selecting only cases for which liberal = 0

Table 10.   Regression of (P.2), with Non-(liberal) States.

Table 10 shows that the variances in the dependent variable (civilwar), when controlling for Non-(liberal) states, can be explained by variances in the independent variable, (rgdpch), 1.3 percent of the time. The standard error is .248 percent, the R-square is .013 and the adjusted R-square is .012, which shows that the linear relationship between the two variables is statistically insignificant. Examining the ANOVA, we find that the F of 44.873 is significant at .000, which is less than the alpha of .05. From this, the ANOVA shows that (rgdpch), when controlled for Non-(liberal) states, is a significant predictor of change in (civilwar). The coefficients for the test show that there is an inverse relationship between the two variables, in that for every unit of change in (rgdpch) there will be 3.731 units of change in (civilwar). This is also statistically significant due to the p-value being below alpha. From this test, we can conclude that (rgdpch) has a statistically insignificant linear relationship with (civilwar). Even though the R-square is not significant, (rgdpch) is a significant predictor of variance in (civilwar) and that for every unit of change in (rgdpch), there is nearly four times the change in (civilwar). From these results, we determine that (P.2) is proved true in that high levels of domestic trade will lower a state's propensity to fall into civil war. Additionally, when controlling for Non-(liberal) states, changes in (rgdpch) will have a greater effect on (civilwar) than no changes in (rgdpch), which is similar to the results of the same test on (P.1).

4.   Regression of (P.2) and Controlling for (cinc)

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	cinc, rgdpch[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: civilwar

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.139[a]	.019	.019	.210

a. Predictors: (Constant), cinc, rgdpch

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.213	2	2.607	58.832	.000[a]
	Residual	266.279	6010	.044		
	Total	271.492	6012			

a. Predictors: (Constant), cinc, rgdpch

b. Dependent Variable: civilwar

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.074	.004		20.006	.000
	rgdpch	-3.829E-6	.000	-.139	-10.786	.000
	cinc	.031	.126	.003	.250	.803

a. Dependent Variable: civilwar

Table 11.   Regression of (P.2), Controlling for (cinc).

Table 11 shows that the variances in the dependent
variable, (civilwar), when controlling for (cinc), can be

explained by variances in the independent variable, (rgdpch), 1.9 percent of the time. The standard error is .210 percent and the R-square and adjusted R-square are both .019, which shows that the linear relationship between the two variables is statistically insignificant. Examining the ANOVA, we find that the F of 58.832 is significant at .000, which is less than the alpha of .05. From this, the ANOVA shows that (rgdpch), when controlled for (cinc) states, is a significant predictor of change in (civilwar). The coefficients for the test show that there is an inverse relationship between the two variables, in that for every unit of change in (rgdpch), there will be 3.829 units of change in (civilwar). This is also statistically significant due to the p-value being below alpha. From this test, we can conclude that (rgdpch) has a statistically insignificant linear relationship with (civilwar). Even though the R-square is not significant, (rgdpch) is a significant predictor of variance in (civilwar) and that for every unit of change in (rgdpch), there is nearly four times the change in (civilwar). From these results, we determine that (P.2) is proved true in that high levels of domestic trade will lower a state's propensity to fall into civil war. Additionally, when controlling for (cinc) states, changes in (rgdpch) will have a greater effect on (civilwar) than no changes in (rgdpch), which is different from the test results on (P.1).

5. Regression of (P.2) and Controlling for (tpop)

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	tpop, rgdpch[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: civilwar

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.139[a]	.019	.019	.210

a. Predictors: (Constant), tpop, rgdpch

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.211	2	2.606	58.810	.000[a]
	Residual	266.280	6010	.044		
	Total	271.492	6012			

a. Predictors: (Constant), tpop, rgdpch

b. Dependent Variable: civilwar

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.074	.004		19.666	.000
	rgdpch	-3.820E-6	.000	-.139	-10.833	.000
	tpop	-3.422E-9	.000	-.002	-.138	.890

a. Dependent Variable: civilwar

Table 12.   Regression of (P.2), Controlling for (tpop).

Table 12 shows that the variances in the dependent variable, (civilwar), when controlling for (tpop), can be

explained by variances in the independent variable, (rgdpch), 1.9 percent of the time. The standard error is .210 percent and the R-square and adjusted R-square are both .019, which shows that the linear relationship between the two variables is statistically insignificant. Examining the ANOVA, we find that the F of 58.810 is significant at .000, which is less than the alpha of .05. From this, the ANOVA shows that (rgdpch), when controlled for (tpop) states, is a significant predictor of change in (civilwar). The coefficients for the test show that there is an inverse relationship between the two variables, in that for every unit of change in (rgdpch), there will be 3.820 units of change in (civilwar). This is also statistically significant due to the p-value being below alpha. From this test, we can conclude that (rgdpch) has a statistically insignificant linear relationship with (civilwar). Even though the R-square is not significant, (rgdpch) is a significant predictor of variance in (civilwar) and that for every unit of change in (rgdpch), there is nearly four times the change in (civilwar). From these results, we determine that (P.2) is proved true in that high levels of domestic trade will lower a state's propensity to fall into civil war. Additionally, when controlling for (tpop) states, changes in (rgdpch) will have a greater effect on (civilwar) than no changes in (rgdpch).

6. Regression of (P.2) and Controlling for (region)

Model Summary

Model	R region = 1 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.148[a]	.022	.021	.223

a. Predictors: (Constant), rgdpch

Model Summary

Model	R region = 2 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.125[a]	.016	.015	.103

a. Predictors: (Constant), rgdpch

Model Summary

Model	R region = 3 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.117[a]	.014	.013	.201

a. Predictors: (Constant), rgdpch

Model Summary

Model	R region = 4 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.102[a]	.010	.009	.155

a. Predictors: (Constant), rgdpch

Model Summary

Model	R region = 6 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.146[a]	.021	.019	.267

a. Predictors: (Constant), rgdpch

Model Summary

Model	R region = 1 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.148[a]	.022	.021	.223

Model Summary

Model	R region = 7 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.109[a]	.012	.011	.238

a. Predictors: (Constant), rgdpch

Table 13.   Regression of (P.2), Controlling for (region).

Analysis of Table 13 shows the linear relationship between the two variables when controlling for (region). By utilizing linear regression, we can conclude that (rgdpch) has an insignificant linear relationship with (civilwar).   While this test does not support (P.2), the results are consistent with the previous results in which all the tests produced a statistically insignificant linear relationship between the two variables.

7.   Regression of (P.2) and Controlling for (milex)

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	milex, rgdpch[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: civilwar

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.140[a]	.020	.019	.210

a. Predictors: (Constant), milex, rgdpch

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.318	2	2.659	60.039	.000[a]
	Residual	266.174	6010	.044		
	Total	271.492	6012			

a. Predictors: (Constant), milex, rgdpch

b. Dependent Variable: civilwar

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.074	.004		20.299	.000
	rgdpch	-3.962E-6	.000	-.144	-10.886	.000
	milex	2.471E-10	.000	.021	1.559	.119

a. Dependent Variable: civilwar

Table 14.   Regression of (P.2), Controlling for (milex).

Table 14 shows that the variances in the dependent variable, (civilwar), when controlling for (milex), can be

explained by variances in the independent variable, (rgdpch), 2 percent of the time. The standard error is .210 percent, the R-square is .020, and the adjusted R-square is .019, which shows that the linear relationship between the two variables is statistically insignificant. Examining the ANOVA, we find that the F of 60.039 is significant at .000, which is less than the alpha of .05. From this, the ANOVA shows that (rgdpch), when controlled for (milex) states, is a significant predictor of change in (civilwar). The coefficients for the test show that there is an inverse relationship between the two variables, in that for every unit of change in (rgdpch), there will be 3.96 units of change in (civilwar). This is also statistically significant due to the p-value being below alpha. From this test, we can conclude that (rgdpch) has a statistically insignificant linear relationship with (civilwar). Even though the R-square is not significant, (rgdpch) is a significant predictor of variance in (civilwar) and that for every unit of change in (rgdpch), there is nearly four times the change in (civilwar). From these results, we determine that (P.2) is proved true in that high levels of domestic trade will lower a state's propensity to fall into civil war. Additionally, when controlling for (milex) states, changes in (rgdpch) will have a greater effect on (civilwar) than no changes in (rgdpch).

E.   TESTING THE CORRELATION BETWEEN (LIBERAL), (HOSTSCORE) AND (CIVILWAR)

Following the tests of (P.1) and (P.2), additional tests, as shown below, were designed to measure the linear

relationship between (liberal), (hostscore) and (civilwar) in order to determine the relationship between liberal governments, inter-state violence, and civil war.

1.   Regression of (liberal) and (hostscore)

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	liberal[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: hostscore

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.006[a]	.000	.000	5.602

a. Predictors: (Constant), liberal

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.652	1	7.652	.244	.621[a]
	Residual	207203.631	6602	31.385		
	Total	207211.283	6603			

a. Predictors: (Constant), liberal

b. Dependent Variable: hostscore

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.879	.086		33.464	.000
	liberal	-.071	.144	-.006	-.494	.621

a. Dependent Variable: hostscore

Table 15.   Regression of (liberal) and (hostscore).

Table 15 shows that the variances in the dependent variable, (hostscore), can be explained by variances in the independent variable, (liberal), 0.0 percent of the time. The standard error is 5.60 percent and the R-square and adjusted R-square are both .000, which shows that the linear relationship between the two variables is statistically insignificant. Examining the ANOVA, we find an F of .244, which is insignificant and a Sig. of .621, which is more than the alpha of .05. From this, the ANOVA shows that (liberal) is an insignificant predictor of change in (hostscore). The coefficients for the test show that there is an inverse relationship between the two variables, in that for every unit of change in (liberal), there will be .071 units of change in (hostscore). This is also statistically insignificant due to the p-value being above alpha. From this test, we can conclude that (liberal) has a statistically insignificant linear relationship with (civilwar). Additionally, (liberal) is an insignificant predictor of variance in (hostscore) and that for every unit of change in (liberal), there is less than one unit of change in (hostscore). From these results, we determine that (liberal) states are just as likely as Non-(liberal) states to initiate inter-state conflict.

2.   Regression of (liberal) and (civilwar)

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	liberal[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: civilwar

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.101[a]	.010	.010	.221

a. Predictors: (Constant), liberal

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.339	1	3.339	68.296	.000[a]
	Residual	322.742	6602	.049		
	Total	326.081	6603			

a. Predictors: (Constant), liberal

b. Dependent Variable: civilwar

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.069	.003		20.284	.000
	liberal	-.047	.006	-.101	-8.264	.000

a. Dependent Variable: civilwar

Table 16.   Regression of (liberal) and (civilwar).

Table 16 shows that the variances in the dependent variable (civilwar), can be explained by variances in the

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independent variable, (liberal), 1 percent of the time. With a small standard error of .22 percent, the R-square and adjusted R-square are .01, which shows that the linear relationship between the two variables is statistically insignificant. Examining the ANOVA, we find an F of 68.29 and a significance of .00, which is less than the alpha of .05. From this, the ANOVA shows that (liberal) is a significant predictor of change in (civilwar). The coefficients for the test show that there is an inverse relationship between the two variables, in that for every unit of change in (liberal), there will be .047 units of change in (civilwar). While the p-value is below alpha, the variance of less than 1 unit is statistically insignificant. From this test, we can conclude that (liberal) has a statistically insignificant linear relationship with (civilwar). Additionally, (liberal) is a significant predictor of variance in (civilwar), but that for every unit of change in (liberal), there is less than one unit of change in (civilwar). From these results, we determine that (liberal) states are less likely, when compared to Non-(liberal) states, to experience civil war.

F.   SUMMARY

Utilizing the methodology specified in Chapter III, this chapter tested the two propositions that comprise the overarching thesis. Specifically, we tested each of the two propositions, and in doing so tested each of the propositions utilizing linear regression to determine the correlation between the independent and dependent variables. In addition, by using the aforesaid control variables, we controlled for or isolated certain

characteristics that may influence the overall results of the tests. We also ran tests on the effect of the variable, (liberal), on the dependent variables (hostscore) and (civilwar).

1. (P.1) High Levels of Domestic Trade Will Lower a State's Propensity to Initiate Inter-State Conflict

The analyses of the first proposition all showed that there is a statistically insignificant linear relationship between the independent variable, (rgdpch), and dependent variable, (hostscore). The only exceptions to this occurred when controlling for (cinc) and (tpop) where the linear relationship was 12.7 and 8.1 percent respectively. This finding is not surprising considering that (cinc) is a measure of a state's national military capabilities and that (tpop) is a subcomponent of (cinc). The conclusion is that when a state increases its national military capabilities, it tends to initiate inter-state conflict, which is further supported by the 36.3 and 29.1 percent correlation between (cinc) and (tpop), and (cinc) and (hostscore) respectively.

Even though there is generally no significant linear relationship between the independent and dependent variables, the results of our tests show that (rgdpch) can reliably predict variances in (hostscore). Moreover, in every case of testing, changes in the independent variable will result in a negative change in the dependent variable. That is, as the number of (rgdpch) units increases, the number of (hostscore) units will decrease, with the exception of the times when controlling for (liberal)

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states. In this test, when we isolated only (liberal) states, an increase of one unit of (rgdpch) resulted in an increase of 3.42 units of (hostscore). While this result was unexpected, it shows that as states with "liberal" governments increase their (rgdpch), they will be more likely to initiate inter-state conflict. This is in keeping with the findings of Quackenbush and Rudy.[76]

Based on the test results, we conclude that while there is no significant linear relationship between (rgdpch) and (hostscore), there is a statistically significant negative correlation of -.36, which is confirmed by significant ANOVA and coefficient values. As such, (P.1) is accepted and we conclude that high levels of domestic trade will lower a state's propensity to initiate inter-state conflict, with the exception of (liberal) states where high levels of domestic trade will increase a state's propensity to initiate inter-state conflict.

2. (P.2) High levels of Domestic Trade Will Lower a State's Propensity to Fall into Civil War

The analyses on the second proposition all show that there is a statistically insignificant linear relationship between the independent variable (rgdpch) and dependent variable (civilwar).

Even though there is generally no significant linear relationship between the independent and dependent

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[76]. Stephen L. Quackenbush, and Michael Rudy, "Evaluating The Monadic Democratic Peace," *Paper Presented at the Annual Meeting of the Midwest Political Science Association, Chicago, Illinois* (April 20-23, 2006).
http://www.missouri.edu/~polswww/papers/monadic%20democratic%20peace_MP SA_.pdf (accessed April 30, 2009).

variables, the results of our tests show that (rgdpch) can reliably predict variances in (civilwar). Moreover, in every test, changes in the independent variable resulted in a negative change in the dependent variable. That is, as the number of (rgdpch) units increase, the number of (civilwar) units will decrease. The results also show that variable, (liberal), is negatively correlated with (civilwar) at -.101, which is keeping with recent scholarship that shows that states with liberal governments are less likely to abuse the rights of their citizens or fall into civil war.[77]

From the results of the above testing, we conclude that while there is no significant linear relationship between (rgdpch) and (civilwar), there is a statistically significant negative correlation of -.128, which is confirmed by significant ANOVA and coefficient values. As such, (P.2) is accepted and we conclude that high levels of domestic trade will lower a state's propensity to fall into civil war.

G.   CONCLUSION

The results of the above testing do show that (rgdpch) is negatively correlated to (hostscore) and (civilwar), but that there is no statistically significant linear

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[77] For more on the effect of liberal governments on domestic violence, see: Havard Hegre, Tanja Ellingsen, Scott Gates, and Niles Gleditsch, "Toward a Democratic Civil Peace? Democracy, Political Change, and Civil War, 1816-1992," *American Political Science Review*, no. 95 (2001): 33-48, Barbara Harff, "No Lessons Learned From The Holocaust? Assessing Risks of Genocide and Political Mass Murder Since 1955," *American Political Science Review* 97, no. 1 (2003), and Christian Davenport and David A Armstrong II, "Democracy and The Violation of Human Rights: A Statistical Analysis From 1976 to 1996," *American Journal of Political Science* 48, no. 3 (2004).

relationship between the independent and dependent variables. Because of the lack of significant findings when considering the linear relationship between the variables, we must consider possible reasons for this result. The first possible reason is that the overarching thesis and supporting propositions are wrong and that domestic trade does not have a significant linear relationship with the dependent variables. The second possible reason is that the data sets might have contained errors or did not accurately measure the independent, dependent, and control variables. The third possibility is that the variables were not accurately operationalized and thus, the data sets selected for the testing were not measuring what they should have been measuring. Lastly, the relationship between the independent and dependent variables might be something other than linear and as such, not accounted for in our testing.

V. CONCLUSION AND POLICY IMPLICATIONS

A. CONCLUSION

This thesis examined how different levels of domestic trade affect the intensity of conflict within and between states. Specifically, the thesis examined whether domestic trade is systematically related to conflict, both international and domestic. Many scholars accept the thesis of democratic peace and international trade. Much scholarship has been presented examining the relationship between the levels of international trade, and in particular bilateral trade, and militarized inter-state conflict. This thesis tried to expand our understanding of inter and intra-state conflict by focusing on domestic trade, a factor that has heretofore not been thoroughly examined.

Much of the foreign policy of the United States is based on the theory that the integration of economies into a global community will increase the level of interdependence. This, in turn, will lower the number and intensity of global militarized intra-state disputes and inter-state war. It is believed that this interdependence will create a secure global environment for the United States and its allies.[78] Much literature has been written on the effects of trade on conflict, and even the

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[78] Office of the President of the United States, *The National Security Strategy of the United States of America* (Washington, D.C.: Government Printing Office, 2006), 25-30 and 47-9.

democratizing effects of trade.[79] However, in the case of states where democracy is expected to grow or at least where are states are expected to become open economies that participate in free and fair trade, it is important to examine the role of domestic trade.[80] Since the majority of the literature addresses either the trade-conflict debate or the relationship between civil war and international trade, this thesis tried to broaden our inquiry by examining the relationship between domestic trade and conflict, both international and internal. The point of departure for this analysis is the theory that domestic trade is intimately related to economic development within a state, which helps to increase political stability.[81] Building on these theories, we assumed that the pacifying benefits of economic development are not limited to

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[79] See: John R. Oneal, Frances H. Oneal, Zeev Moaz and Bruce Russett, "The Liberal Peace: Interdependence, Democracy, and International Conflict," *Journal of Peace Research* 33, no. 1 (February 1996), John R. Oneal and James Lee Ray, "New Test of the Democratic Peace: Controlling for Economic Interdependence, 1950-85," *Political Research Quarterly* 50, no. 4 (December 1997), John R. Oneal and Bruce M. Russett, "The Classical Liberals Were Right: Democracy, Interdependence, and Conflict, 1950-1985," *International Studies Quarterly* 41, no. 2 (June 1997), John R. Oneal and Bruce Russett, "Assessing the Liberal Peace with Alternative Specifications: Trade Still Reduces Conflict," *Journal of Peace Research* 36, no. 4 (July 1999), and Bruce Russett, John R. Oneal and David R. Davis, "The Third Leg of the Kantian Tripod for Peace: International Organizations and Militarized Disputes, 1950-85," *International Organization* 52, no. 3 (Summer 1998).

[80] Office of the President of the United States, *The National Security Strategy of the United States of America* (Washington, D.C.: Government Printing Office, 2006): 25-6.

[81] Adam Przeworski et al., *Democracy and Development: Political Institutions and Well-Being in the World, 1950-1990* (Cambridge: Cambridge University Press, 2000).

internal disputes and that improved domestic trade can reduce the number and intensity of militarized conflicts within and between states.

For our analysis, the thesis hypothesized that domestic trade and conflict is negatively correlated and made the following propositions that were tested, analyzed, and accepted in the course of our analysis.

<u>Propositions</u>

(P.1) High levels of domestic trade will lower a state's propensity to initiate inter-state conflict.

(P.2) High levels of domestic trade will lower a state's propensity to fall into civil war.

From the results of testing (P.1), we conclude that there is no significant linear relationship between (rgdpch) and (hostscore), but there is a statistically significant negative correlation of -.36, which is confirmed by significant ANOVA and coefficient values. As such, high levels of domestic trade will lower a state's propensity to initiate inter-state conflict, with the exception of (liberal) states where high levels of domestic trade will increase a state's tendency to initiate inter-state conflict.

In addition, the results of testing (P.2) show that there is no significant linear relationship between (rgdpch) and (civilwar), but there is a statistically significant negative correlation of -.128, which is confirmed by significant ANOVA and coefficient values. As such, high levels of domestic trade will lower a state's propensity to fall into civil war.

B.   POLICY IMPLICATIONS

The results of our analysis imply that the adoption of certain polices which result in effects that are in line with our findings will decrease the amount of inter-state disputes and civil war. As such, after considering the results of testing (P.1) and (P.2), we can infer certain policy implications that are discussed below.

The liberal international relations theory of democratic peace suggests that states with democratic forms of government will never go to war. This theory is obviously attractive, because if valid, then democracy is central for ending international violence. The implication of this conclusion is obvious. Supporting the spread of democracy throughout the world will create the conditions for perpetual peace, a result with which no one can argue.[82] While very attractive, some critique the theory as a myth, citing numerous cases when states with democratic governments engaged in conflict. In addition, they argue that the data used to formulate the theory is insignificant because the number of democratic governments is small and relatively modern.[83]   The findings of our research imply

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[82]   For more on the democratic peace theory, see: Dean V. Babst, , "A Force for Peace," *Industrial Research* (1972), Melvin Small and David J. Singer, "The War Proneness of Democratic Regimes, 1816-1965," *Jerusalem Journal of International Relations*, no. 1 (1976), Zeev Maoz and Nasrin Abdolali, "Regime Types and International Conflict, 1816-1976," *Journal of Conflict Resolution* (1989), Stuart A. Bremer, , "Democracy and Militarized Interstate Conflict, 1816-1965," *International Interactions*, no. 18 (1993), and Zeev Maoz and Bruce Russett, "Normative and Structural Causes of Democratic Peace, 1946-1986," *American Political Science Review*, no. 87 (1993).

[83] See: Christopher Layne, "Kant or Cant: The Myth of The Democratic Peace," *International Security* 19, no. 2 (1994), and Thomas Schwartz, and Kiron K. Skinner, "The Myth of The Democratic Peace," *Obris* 46, no. 1 (2002).

that this latter group of scholars are correct and that the theory of democratic peace does not have a statistically significant effect on the propensity of a state to initiate an inter-state dispute. Specifically, states considered to have liberal governments had a lower incidence of initiating inter-state disputes .006 percent of the time. Moreover, states with liberal governments were 10 percent less likely to fall into civil war, which while significant, explains less variance than the variable domestic trade.

Comparing the above results to the relationship of domestic trade with inter-state violence, we found that domestic trade could reduce the incidence of initiating inter-state violence 3.6 percent of the time. This is a weak, but statistically significant relationship. Moreover, domestic trade decreases the propensity of a state to fall into civil war 12.8 percent of the time. In the cases of inter-state disputes and civil war, increasing domestic trade lowers a state's propensity to initiate an inter-state dispute or fall into civil war more than promoting the spread of democracy.

The policy implication of the above is obvious. Having a goal of eliminating or decreasing the level of inter-state disputes and civil war in order to ensure our national security would not involve spreading democracy, but rather would involve increasing the level of domestic trade within states. This is not to say that our findings discount the pacifying effects of democracy, but rather, that increasing levels of domestic trade have a greater impact on the propensity to initiate inter-state disputes

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or to fall into civil war. Implementing policy with the goal of advancing domestic trade would have the greatest statistical effect on inter-state disputes and civil war.

C.   AREAS FOR FUTURE RESEARCH

We will be the first to admit that this study only scratched the surface of examining the relationship between domestic trade and inter-state disputes and civil war. However, from our research, we can recommend certain areas for future study. Building on the conclusion of Chapter IV, our study should be repeated using different data sets to measure the variables. Moreover, because we might have incorrectly operationalized the variables, a careful analysis might indeed show them to be incorrect and further research many find more accurate ways to measure the variables. Lastly, because we conclude that there is no significant linear relationship between the independent and dependent variables, additional testing should be run utilizing different regression models.

APPENDIX: DATA SET CODE BOOK

The following describes the particulars for each of the variables and variable components used in this study.

country:	Country Name
Year:	Data Year
rgdpch[84]:	Real GDP in constant 2000 United States dollars (does not include net exports)
kc:	Consumption Share of rgdpch
kg:	Government Share of rgdpch
ki:	Investment Share of rgdpch
region[85]:	1=East Asia and Pacific
	2=Europe and Central Asia
	3=Latin America and Caribbean
	4=Middle East / North Africa
	5=North America
	6=South Asia
	7=Sub-Saharan Africa
liberal[86]:	1=Liberal Government
	0=Other

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[84] For rgdpch, kc, kg, and ki see: Robert Summers and Alan Heston, "The Penn World Table (Mark 5): An Expanded Set of International Comparisons, 1950-1988," *The Quarterly Journal of Economics* 106, no. 2 (May 1991).

[85] The World Bank, "World development Indicators 2009," April 22, 2009, http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/0,,contentMDK:21725423~pagePK:64133150~piPK:64133175~theSitePK:239419,00.html (accessed May 01, 2009). In addition, see: Douglas M. Stinnett, Jaroslav Tir, Philip Schafer, Paul F. Diehl, and Charles Gochman, "The Correlates of War Project Direct Contiguity Data, Version 3," *Conflict Management and Peace Science*, 2, 19 (2002): 58-66.

[86] Michael Doyle, "Ideologies and Politics: Liberal Democracy and National Dictatorship in Peace and War," in *War and Peace in the 20th Century and Beyond*, ed. Geir Lundestad and Olav Njolstad (Singapore: World Scientific Publishing Co. Pte. Ltd, 2002): 60.

stateabb: State Abbreviation

irst[87]:   Iron and steel production (thousands of tons)

milex: Military expenditures (in constant 2001 United States dollars)

milper: Military personnel (thousands)

energy: Energy consumption (thousands of coal-ton equivalents)

tpop: Total population (thousands)

upop: Urban population (population living in cities with a population greater than 100,000)

cinc: Composite Index of National Capability (CINC)

hiact[88]:   Highest action of dispute

                 0 No militarized action [1]

                 1 Threat to use force [2]

                 2 Threat to blockade [2]

                 3 Threat to occupy territory [2]

                 4 Threat to declare war [2]

                 5 Threat to use CBR weapons [2]

                 6 Threat to join war

                 7 Show of force [3]

                 8 Alert [3]

                 9 Nuclear alert [3]

                 10 Mobilization [3]

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[87] For irst, milex, milper, energy, tpop, upop, and cinc see: David J. Singer, Stuart Bremer, and John Stuckey, "Capability, Distribution, Uncertainty, and Major Power War, 1820-1965," in *Peace, War, and Numbers*, ed. Bruce M. Russett (Beverly Hills: Sage, 1972).

[88] For hiact and maxhost see: Faten Ghosn, Geln Plamer, and Stuart Bremer, "The MID3 Dataset, 1993-2001: Procedures, Coding Rules, and Description," *Conflict Management and Peace Science*, no. 21 (2004): 133-154.

11 Fortify border [3]

12 Border violation [3]

13 Blockade [4]

14 Occupation of territory [4]

15 Seizure [4]

16 Attack [4]

17 Clash [4]

18 Declaration of war [4]

19 Use of CBR weapons [4]

20 Begin inter-state war [5]

21 Join inter-state war [5]

-9 Missing [-9]

maxhost: Above bracketed numbers refer to corresponding hostility level

sumhost: Sum of all hostility levels

count: Number of hiact incidents directed to other states

hostscore: Sum of sumhost and maxhost

civilwar[89]:   0=No civil war

              1=civil war

The propositions that were tested:

(P.1) High levels of domestic trade will lower a state's propensity to initiate a militarized inter-state dispute.

In testing P.1, we compared the relationship between the independent variable (domestic trade) and the dependent

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[89] Meredith Sarkees, "The Correlates of War Data on War: An Update to 1997," *Conflict Management and Peace Science*, 18, 1 (2000): 123-144.

variable (the COW MID data set). We also utilized the control variables (regime type, region, and military capability ratio) to include the subcomponent population. We built a one-year lag into our testing in order for changes in the independent variable to be seen in the dependent variable. In testing this proposition, we expected that the independent variable would decrease prior to an increase in conflict intensity in the dependent variable.

Independent variable = rgdpch

Dependent Variable = hostscore

Control Variables = liberal, region, cinc, tpop

(P.2)   High levels of domestic trade will lower a state's propensity to fall into civil war.

In testing P.2, we compared the relationship between the independent variable (domestic trade) and the dependent variable (the COW Intra-State War v3.0 data set). We also utilized the control variables (regime type, region, and military capability ratio) to include the subcomponent population and military expenditures. As said above, we built a one-year lag into our testing in order for changes in the independent variable to be seen in the dependent variable. In testing this proposition, we expected that the independent variable would decrease prior to the initiation of rebellion or civil war in the dependent variable.

Independent Variable = rgdpch

Dependent Variable = civilwar

Control Variables = liberal, region, cinc, tpop, milex

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